Textile Industries

SEPTEMBER, 1947

formerly COTTON Textile Industries

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Per. Sept. 23

A NEW BLEACHERY
for the famous
LADY PEPPERELL

The famous Lady Pepperell sheets are now getting their beauty treatments in Pepperell's new, streamlined, bleachery located next door to their 60,000-spindle mill at Opelika, Ala.

Here, in the Company's first Southern bleachery, modern building techniques and materials are combined with the latest machinery and equipment into an efficient and streamlined production unit. Designed for continuous bleaching and finishing of top-quality sheets, pillow cases, work clothing and other fabrics, the new unit includes a steam generating plant and a filtering plant with a daily capacity of 3 million gallons.

As architects and engineers for this modern, efficient bleachery, we were able to employ the experience of 30 years service to the textile industry.

ROBERT AND COMPANY ASSOCIATES
INCORPORATED
Architects and Engineers
ATLANTA

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Schefer, Schramm & Vogel
Established 1839

Peierls, Buhler & Co., Inc.
Established 1893

TWO PARK AVENUE, NEW YORK

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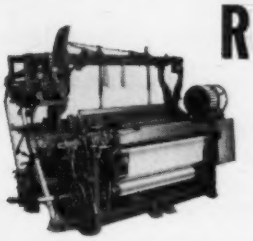
T. HOLT HAYWOOD, WINSTON-SALEM, NORTH CAROLINA

TEXTILE INDUSTRIES is published monthly at 115 E. Gordon St., Dalton, Ga., by W. R. C. Smith Publishing Company, Dalton and Atlanta, Ga., U. S. A.
Executive and Editorial Offices: Grant Bldg., Atlanta 3, Ga.
Subscription Rates, United States and Possessions, $2.00 for one year; Canada, South America, Central America, $2.00 per year; Foreign Countries, $5.00 per year.
Entered as second-class matter at the Post Office, Dalton, Ga., under the Act or March 3, 1879.

Volume 111 Number 9

HIGH SPEED XD MODEL RAYON LOOM



FOR YOUR
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RAYON FABRICS

Retaining Leadership Through Research

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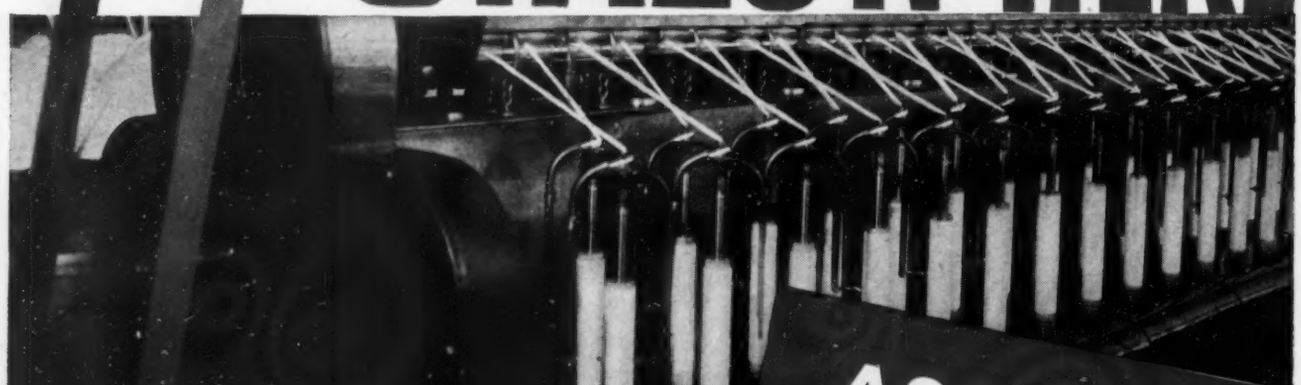
STAZON HERE



Texaco Stazon is the ideal lubricant for all top rolls. True to its name, *Stazon* STAYS ON the bearing surfaces, doesn't creep on to the roll cot ...thus helps you produce cleaner sliver and yarn.

Use *Stazon* also for loom lubrication. Even the shocks and vibration of weaving won't cause *Stazon* to splatter or drip onto the fabric. You'll have appreciably more stain-free yardage passed by your cloth inspectors.

Wherever used, Texaco Stazon is highly stable . . . does not form gummy deposits . . . is not affected by humidity. It's economical, too—because the protection lasts and fewer applications are required.

Assure clean yarn and fabric. Use *Texaco Stazon* in the grades recommended by a Texaco Lubrication Engineer. Just call the nearest of the more than 2500 Texaco distributing plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, New York.

TEXACO
REG. T.M.

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

Tune in...TEXACO STAR THEATRE presents the TONY MARTIN SHOW every Sunday night. See newspaper for time and station.

SEP 18 1947

Volume 111, Number 9

Textile Industries

COTTON

SEPTEMBER, 1947

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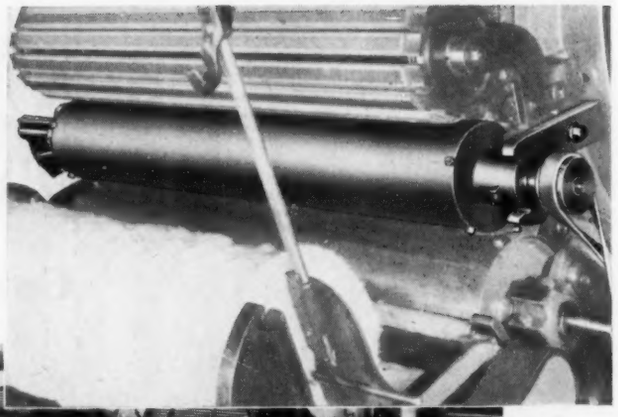
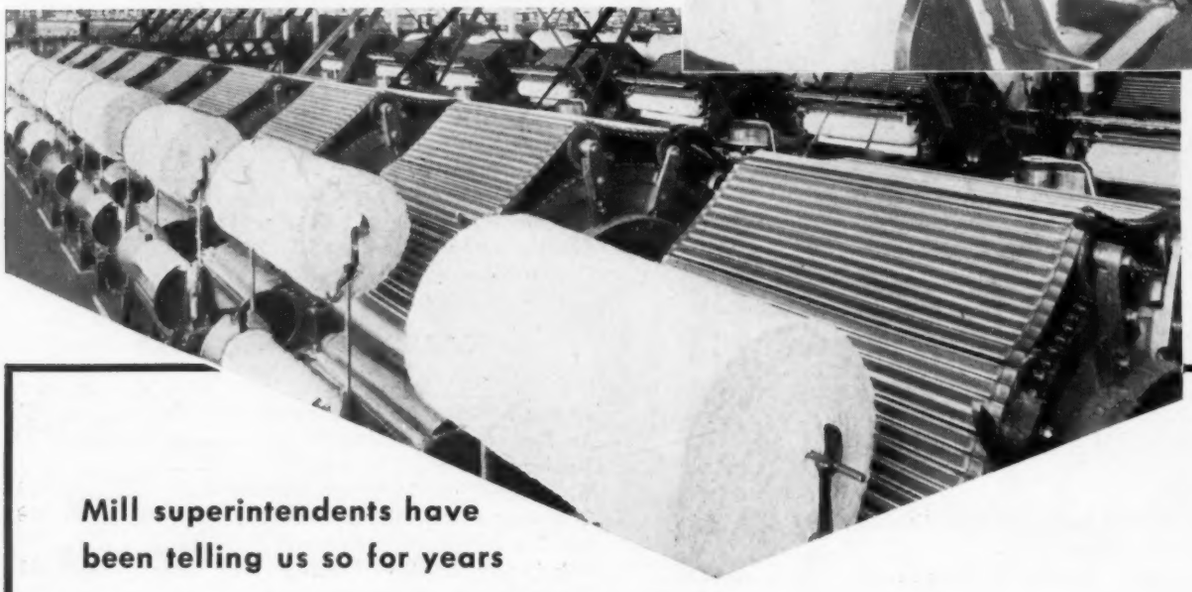
OVER 12,000
CONTINUOUS STRIPPERS

are saving time, increasing production and improving quality in American mills





Mill superintendents have been telling us so for years

Here are a few excerpts from their letters:

1930 *". . . the cards will run almost indefinitely without stripping . . . we expect to send you an additional order."**

1936 *". . . we feel you are conservative in your claims."**

1940 *". . . we are very well pleased with the performance of this equipment . . . we have found definite savings as well as more uniform work."**

1943 *". . . they have paid for themselves many times over . . . we could not get along without them."**

1946 *". . . Mr. ——* is high in his praise of our Continuous Strippers. Says they are doing a wonderful job, and he really has good-running work to prove it. Very seldom see an end down on spinning, even though he is running some irrigated cotton which several of the other mills in this group say they cannot run."*

1947 *". . . Mr. ——* told me that since installing these strippers the yarn breaking strength had gone up and the looms were running at a higher efficiency."*

*Name on request.

The efficient Saco-Lowell Continuous Card Stripper offers your mill these proved advantages: saving of cotton — increased production — improvement in quality of yarn — cleaner card room — saving in labor costs — reduction in power consumption. It is easily and quickly installed on all Saco-Lowell Cards — and on many other makes as well. Write the nearest office for our Bulletin giving complete details.

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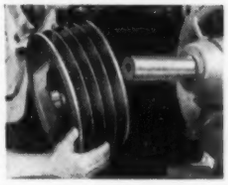
Save time . . . prevent damage to motor and shaft . . . with TEXROPE

"MAGIC-GRIP" SHEAVES



QUICKLY ALIGNED

Because it slides freely on the shaft, it's easy to line up the sheave accurately — for good alignment, smooth operating, longer belt life. It pays to standardize on "Magic-Grip" sheaves.

See Sweet's Catalog

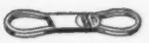
SLIPS ON EASILY

Comes completely assembled. Tapered split bushing provides clearance for even over-size shafts — it's compressed and locked to the shaft with an all-around clamp grip by tightening three cap screws. Can be removed as easily as it goes on.

HERE'S A SHEAVE that goes on *fast*. Less labor cost — less downtime. But that's only part of the saving. There's no forcing or hammering to damage motor bearings — no set screws to mar the shaft. Locks on with a powerful clamp grip that prevents backlash or wobble. And . . . it costs no more than a standard heavy duty sheave of comparable materials and precision workmanship.

Texrope "Magic-Grip" sheaves are made in diameters from 5.4 to 48 inches, two to 12 grooves. They're engineered by Allis-Chalmers, originators of the multiple V-belt drive. For specifications, prices, call your nearest A-C dealer or office. ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN. A 2221

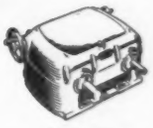
TEXROPE .. Greatest Name in V-Belt Drives



"Super 7" V-BELTS
Five Types — Sizes to suit every power transmission job.

Texsteel, Texdrive, "Magic-Grip"
— sheaves in a full range of sizes, grooves.

"Vari-Pitch" SHEAVES
Exact variations in speed, stationery or motion control.



SPEED CHANGERS
Speed variations up to 375% at the turn of a crank.

ENGINEERING
Finest V-Belt engineering talent in the world—at your call.

TEXROPE "Super 7" V-Belts result from the cooperative research of two great companies — Allis-Chalmers and B. F. Goodrich. They are sold only by A-C.

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One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

1847 1947 A CENTURY OF SERVICE to Industry THAT MADE America Great

Ever name triplets?

Monsanto had to recently . . . and it wasn't easy. You see, Monsanto's unique new textile chemical, Resloom . . . introduced first to make *rayons crush-resistant* . . . now has a wonderful, new "sister" application: *making woolens washable*. And soon to be offered are equally remarkable improvements for cottons. In brief, Resloom is the *basic* product; there are three variations in formula to do three different jobs.

The question arose: Should there be one name for all three of these applications . . . or three names, one each for each special function? There were good arguments for either choice.

Monsanto decided it would be less confusing and less burdensome to the trade to have *one* name, Resloom, already well-known. *BUT with this important variation:* the different formulation for each application was given an individual sub-title. Thus, Monsanto now has:

1	**RESLOOM**—Formula R for Crush-Resistant Rayon
2	**RESLOOM**—Formula W for Washable Woolen
3	**RESLOOM**—Formula C for Wrinkle-Resistant Cotton

Resloom, therefore, will mean generally . . . *lasting character and greater performance* to wool, cotton, rayon. And it will mean special properties for each major type of fiber, as indicated. Obviously, in blended fabrics Resloom will improve every part.

Monsanto is certain that this simplifying decision will work out to the greatest advantage for all concerned. You are invited to investigate any or all of these Resloom formulations for *your* products. Monsanto has an ambitious program of promotion for the months ahead . . . take advantage of it by taking advantage of Resloom . . . for crush-resistant rayons, washable woolens, wrinkle-resistant cottons. Address: MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, 140 Federal St., Boston 10, Mass.

MONSANTO
CHEMICALS — PLASTICS

*Reg. U. S. Pat. Off.

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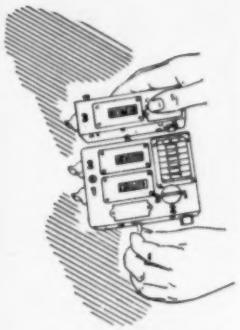
You get ALL these Vantage Points

when you get

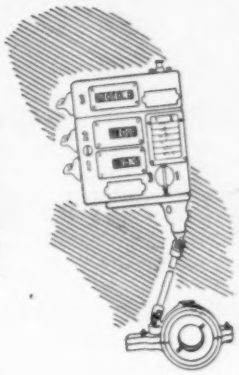
VEEDER-ROOT 2-3 PICK COUNTERS

in your mill!



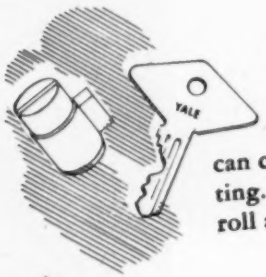
QUICK CONVERTIBILITY
RIGHT IN YOUR OWN MILL

Your own mechanics can quickly convert your 2-Shift 2-3 Pick Counters into 3-Shift Pick Counters . . . simply by adding the 3rd Counting Unit. This protects you against counter-obsolescence.



COMPLETE INSTALLATION
NO EXTRAS TO BUY

You get everything you need —every last part, pin and bolt —when you buy Veeder-Root 2-3 Pick, Hank, Lineal or Knitting Counters, Nothing to buy or make.



YALE LOCK
ON THE FRONT DOOR

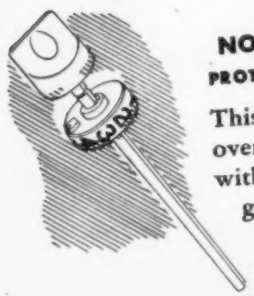
Makes certain that *only* the authorized key-holder can clear the readings by resetting. Protects accuracy of payroll and production records.

FIELD ENGINEERS
AT YOUR SERVICE

All over the country, Veeder-Root engineers are located in important textile centers. They will respond promptly to your request for aid in counting problems. Get in touch with the nearest office.

COMPRESSION CLAMPS
CUT INSTALLATION COST

Grip shaft securely, top and bottom . . . save time in fitting worm onto shaft. And these spring-steel clamps also eliminate drilling and weakening of shaft.



NON-OVERTHROW WHEEL
PROTECTS AGAINST OVERTHROWING

This wheel stubbornly resists overthrowing when disengaged with shaft spline. When engaged with shaft spline, it readily resets to zero.

ADDED VANTAGE POINTS OF VEEDER-ROOT 2-3 COUNTERS

BOLD VISIBILITY
SPEEDS UP READING TIME

NEW WHEELS
GIVE STRENGTH PLUS LOW WEIGHT

STEEL MOUNTING INSERTS
EXTRA STRENGTH AGAINST LOOM VIBRATION

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FOR RAPID RESETTING

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Amanil* Developer BON is the original — the most desirable — and by far the most economical developer of its kind found on the market today.

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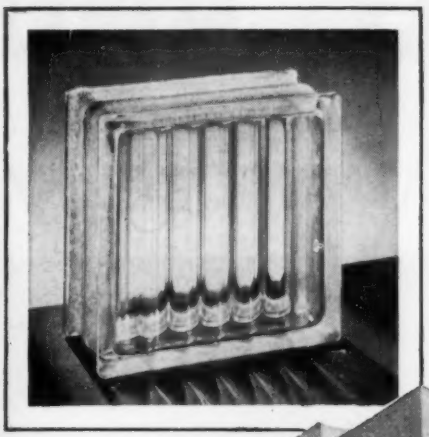

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Architect: S. J. Kessler
General Contractors: K & L Construction Co., Inc.

Modern appearance, modern efficiency, modern economy—those are the main advantages you get with PC Glass Blocks.

Panels of gleaming glass blocks make any textile mill a thing of beauty. Spacious interiors, with plenty of cheery clear daylight, are pleasant places to turn out good work. And the light can be directed to where it is needed most, even to areas remote from light openings.

PC Glass Blocks are hollow, have definite insulating properties. Heat losses through light transmitting areas are reduced to the minimum. Desired temperatures are easier to maintain and condensation is minimized. Infiltration of destructive dust and grit is prevented.

These are some of the reasons why many mill managers are using PC Glass Blocks for new construction and for modernizing projects. You will want to know all the advantages you get with PC Glass Blocks. Send the coupon today for our authoritative booklet. The Pittsburgh Corning Corporation also makes PC Foamglas Insulation.

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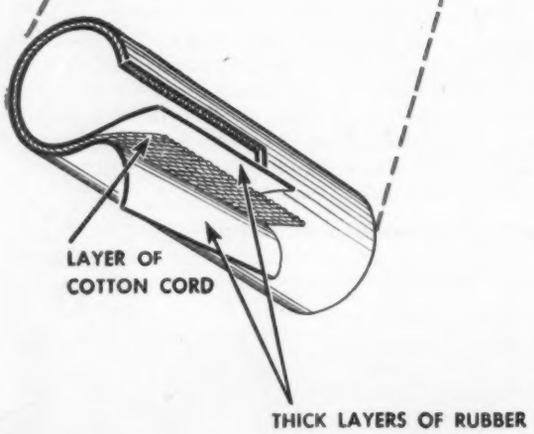


Exclusive Armstrong Construction Gives You Extra Advantages

Diagram of Accotex Apron at left shows how heavy, seamless layers of non-oxidizing, highly oil-resistant synthetic rubber enclose a sturdy, non-stretch cord interliner. This special Armstrong construction not only helps prevent stretching or tearing of Accotex Aprons but also offers these other big operating advantages:

- **LONG LIFE:** Accotex Aprons in service for more than five years show little sign of wear.
- **CLEAN RUNNING:** Accotex Aprons do not crack or scuff. Thus they assure cleaner running work and less waste.
- **REDUCED LAPPING:** Accotex Aprons are not affected by temperature or humidity. They perform with a minimum of lapping.
- **GOOD FRICTION:** The efficient "grip" of Accotex Aprons keeps slippage at a minimum.

ACCOTEX COTS
CORK COTS

BETTER PRODUCTION

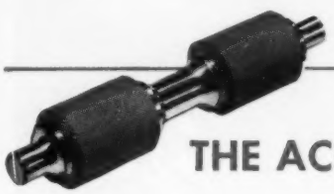
wearing ACCOTEX APRONS

Accotex Long Draft Aprons help keep production rolling because they wear uniformly. Every Accotex Apron is made of a tough synthetic rubber compound that is controlled during manufacture to eliminate the variations normal in a natural product. Thus when you run on Armstrong's Accotex Aprons, apron replacement normally need be done only at regular overhauling periods.

Controlled uniformity also provides better drafting, better fiber control. Throughout their long life, you can count on dependable, uniform service from Accotex Aprons.

To provide added assurance that Accotex Aprons will not tear, break open, or stretch, Armstrong developed a special construction that uses heavy seamless layers of synthetic rubber to enclose a strong, non-stretch cord interliner.

Install Armstrong's Accotex Aprons on a test frame in your mill. See how these superior aprons step up yarn quality and increase poundage. Ask your Armstrong representative for samples, prices. Or write today to Armstrong Cork Co., Textile Products Dept., 3609 Arch Street, Lancaster, Pa.



THE ACCOTEX COT . . . by the makers of Accotex Aprons

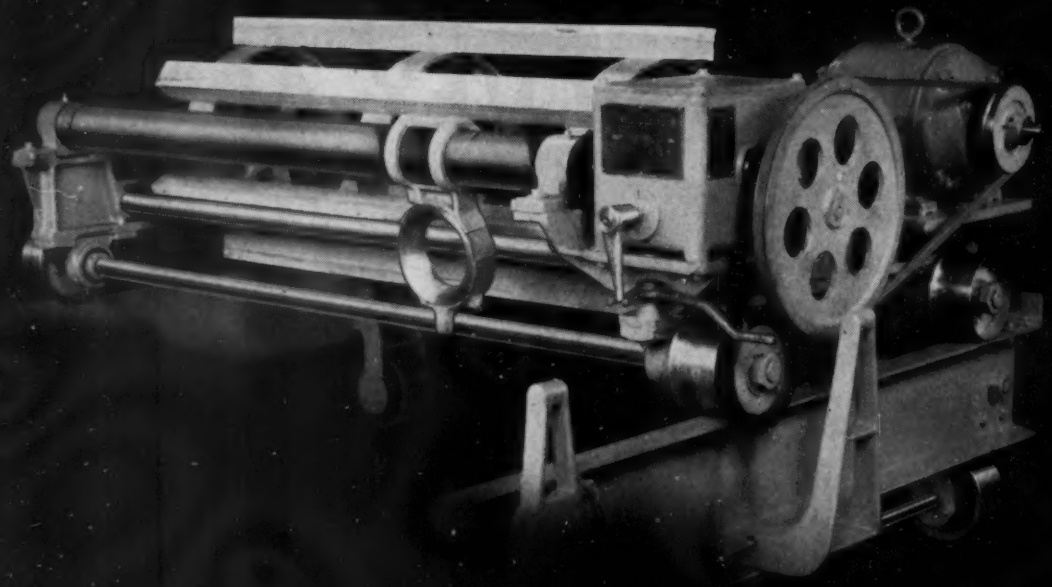
The most widely used textile roll coverings, Accotex Cots are the result of the same specialized research and technical skill that produced the Accotex Apron. Here are eight reasons why Accotex Cots spin higher quality yarn and increase poundage.

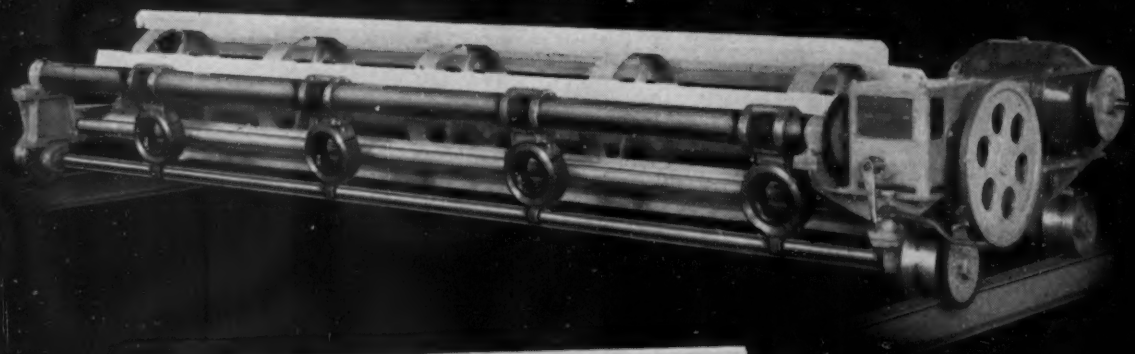
1. **LONG SERVICE**—Accotex Cots are tough. And they can be rebuffed 5 or 6 times.
2. **GOOD DRAFTING**—Accotex Cots retain their excellent grip, because their cork-and-synthetic compositions resist slicking.
3. **REDUCED EYEBROWING**—The resistance of cork-and-rubber to slicking minimizes eyebrowing
4. **REDUCED LAPPING**—Accotex Cots have no affinity for textile fibers and are not affected by temperature or humidity.
5. **GOOD START-UP**—Accotex Cots are non-thermoplastic, resist flattening.
6. **SOLVENT RESISTANCE**—Accotex Cots are not affected by oil, water, dyes, or any of the commonly used textile solvents.
7. **SEAMLESS CONSTRUCTION**—Accotex Cots have no seams—no structural weakness to cause premature failure.
8. **QUICK ASSEMBLY**—Accotex Cots are ready glued for easier, quicker assembly.

ARMSTRONG'S ACCOTEX APRONS

PERKINS AUTOMATIC BIN PILERS

PATENTED





You cannot afford to pile by hand

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ENGINEERS AND MANUFACTURERS

HOLYOKE • • • MASSACHUSETTS

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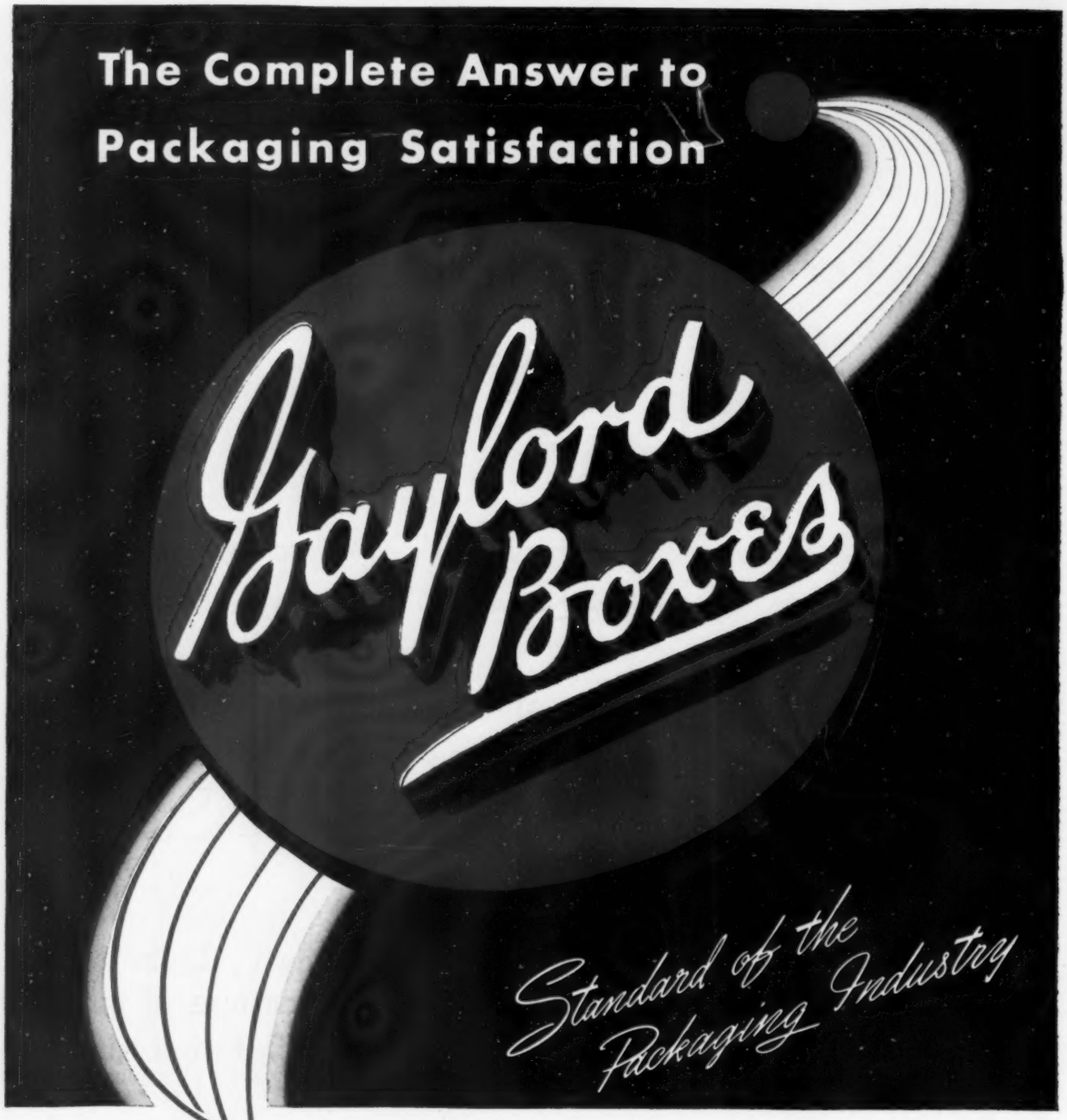
For IMMEDIATE DELIVERY

We manufacture and keep on hand for immediate delivery a complete stock of repair parts for Kitson pickers. We can also furnish many parts, such as screens, ball bearings, aprons, and beaters, for other pickers.

In an emergency, a telephone call or telegram can have the needed repair parts at your plant the day after the order is placed.

Aldrich rebuilt pickers are exactly like new machines, and where it is not feasible to have your own pickers rebuilt, these can be exchanged for similar sections in our warehouse which can be rebuilt for you and installed with little or no interruption to production.

AldricH MachinE
Greenwood **WorkS** South Carolina



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CHEMICAL USERS' GUIDE To General Chemical Company Products for the Textile Industry

PRODUCT	AVAILABLE FORMS	COMMERCIAL STRENGTH (MIN.)	SHIPPING CONTAINERS	APPLICATIONS
Glauber's Salt, Crystal $Na_2SO_4 \cdot 10H_2O$ *(Sodium Sulfate)*	Colorless Crystals	96% $Na_2SO_4 \cdot 10H_2O$ 42.3% Na_2SO_4	Bags Barrels	Dyeing assistant.
Glauber's Salt, Anhydrous Na_2SO_4 *(Sodium Sulfate)*	White Granules	99.5% Na_2SO_4	Bags Fibre Drums	Same as crystal but stronger product.
Sulfuric Acid H_2SO_4	Liquid	66° Be 93.19% H_2SO_4	Carboys Steel Drums Tank Trucks Tank Cars	Carbonizing wool; dyeing; desizing cotton; souring; rayon spinning bath.
Acetic Acid CH_3COOH + water	Colorless Liquid	Various	Carboys Barrels Tank Cars	Dye bath; souring agent; imparting scroop to cotton and silk.
Aqua Ammonia NH_4OH + water *(Ammonia)*	Colorless Liquid	26° Be 29.4% NH_3	Carboys Steel Drums	Wool scouring; dyeing.
Hydrochloric Acid HCl + Water *(Muriatic Acid)*	Liquid	22° Be 34.1% HCl	Carboys Tank Cars Tank Trucks	Souring; removing hypochlorite bleach; dyeing.
Tetrasodium Pyrophosphate, Anhydrous $Na_4P_2O_7$ *(TSPP) (Pyro)*	White Powder	98% $Na_4P_2O_7$ (Equiv. 52% P_2O_5)	Bags	Stabilizing peroxide bleaches; water treatment and dispersing agent; detergent.
Sodium Metasilicate $Na_2SiO_3 \cdot 5H_2O$	White Granules	29.0% Na_2O	Bags Fibre Drums	Kier boiling as detergent.
Sodium Sulfide Na_2S + water	Red Chips or Solid Mass	60% Na_2S	Steel Drums	Dyeing with sulfur dyes; depilatory for wool pulling; desulfuring rayon.
Sodium Sulfite, Anhydrous Na_2SO_3 *(Sulfite)*	White Powder	98.5% Na_2SO_3	Bags Fibre Drums	Rayon manufacturing.
Sodium Bisulfite, Anhydrous $Na_2S_2O_5$ *(ABS) (Sodium Metabisulfite)*	White Powder	97.5% $Na_2S_2O_5$ (Equiv. 65.5% SO_2)	Fibre Drums	Bleaching wool; anti-chlor after bleaching with hypochlorite; rayon manufacturing.
Oxalic Acid $C_2H_2O_4 \cdot 2H_2O$	Colorless Crystals	99.5% $C_2H_2O_4 \cdot 2H_2O$	Fibre Drums	Bleaching; dyeing; for mordanting wool with chrome.
Ferric Sulfate $Fe_2(SO_4)_3$ + water *(Iron Copperas Nitrate)*	Liquid	47° Be 11% Fe	Carboys Barrels	Silk weighting; mordant.
Ferric Nitrate $Fe(NO_3)_3$ + water *(Iron True Nitrate)*	Liquid	43° Be 47° Be 10% Fe 11% Fe	Carboys Barrels	Silk weighting; mordant.

BASIC CHEMICALS

GENERAL CHEMICAL COMPANY

FOR AMERICAN INDUSTRY

OTHER PRODUCTS: Disodium Phosphate; Nitre Cake; Sodium Silicate; Trisodium Phosphate; Sodium Hyposulfite; Aluminum Sulfate; Lead Acetate; Mixed Acid; Epsom Salt; Chrome Alum; Aluminum Chloride; Ammonia Alum; Potash Alum; Ammonium Sulfate.

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For finishing, CERANINE HC is recommended. This cationic softener does not yellow whites or change the shade of dyed goods. Light fastness is not impaired.

For acid, chrome or direct dyes... or auxiliary chemicals... for both natural and synthetic fibres... be guided by the successful "color achievements" you have been seeing in these Sandoz advertisements. Sandoz application laboratories are located in New York, Boston, Philadelphia, Los Angeles, Charlotte, Toronto, where stocks in wide range are carried. Other branches are in Chicago, Paterson and Providence.

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SANDOZ *thinks ahead with textiles*

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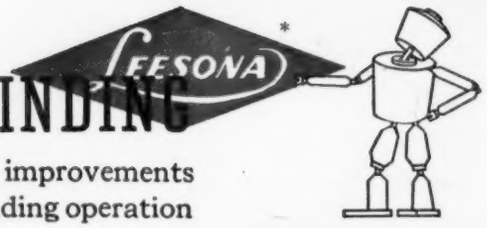
1947

THIS IS NO. 65 OF A SERIES ON

GETTING THE MOST FROM WINDING



Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

DELIVERY POINT OF THREAD GUIDE (No. 50 Winding Machine)

It is a good idea to check occasionally on the relation of the Thread Guide and its delivery point to the winding package. When installing new porcelain guides this always should be done. The operation is very simple, involving only the use of a piece of carbon paper and possibly a pair of pliers.

Place the carbon paper, carbon side out, between empty cone and Thread Guide. Press the guide against the paper and draw the paper straight up.

1. If the Guide is in correct adjustment, there will be a carbon smudge at the bottom of the V-shaped thread slot centrally located across the face of the Guide.

2. If the V of the slot cuts into the smudge, it shows that the V is too low. The Thread Guide Holder should be bent backward with the pliers until the V just touches the paper.

3. If the V does not touch the smudge, the Guide is too high. The Holder should be bent forward slightly.

4. If the carbon smudges at only one side of the slot, the Guide is off center. The Holder should be twisted until the carbon paper will smudge uniformly across the face of the Guide.

Sometimes Guides are mistakenly used with a Traverse Frame Back of different taper, which will cause wear in one or both parts. The fault is evidenced by a polished surface on the edge of the Guide that is in contact with the Back. Guides used with the correct Back will wear very slowly and will show this wear as a polished surface across the entire width of the Guide. If a Guide used with the correct Back shows wear on one edge only, it has become bent and should be given a slight twist toward the high side so that it will conform to the contour of the Back.

Fig. 2 Shiny surface at left shows extra wear. Guide does not lie flat against Traverse Frame Back.

CORRECT SETTING OF BREAKAGE LEVER (Roto-Coner*)

The purpose of the Breakage Lever is to keep the stopping parts out of operation while winding is taking place and to cause them to work promptly when a break in the yarn occurs or the end runs out. Improper setting may cause slow stopping, unnecessary end breakage, and the necessity of applying extra tension on the yarn.

The Breakage Lever should be located close to the Bail at the back of the Tension Bracket. The clamps that hold the Breakage Lever have long slots so that they can be adjusted back and forth to assist in regulating the action of the Breakage Lever.

They should be far enough back to meet the following requirements. There must be no vibration of the Breakage Lever while winding. The Breakage Lever must act promptly when yarn breaks or runs out, so that the cone will lift promptly and yarn will not wrap around the Rotary Traverse.

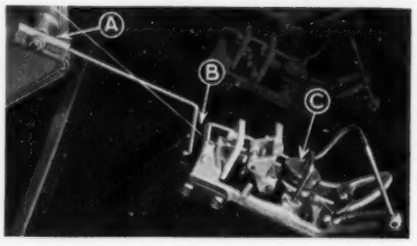


Fig. 3 Bail B is too far from Tension Bracket and Clamps A are improperly adjusted. Extra Tension Weight C is used to hold down the Bail. This causes bad winding.

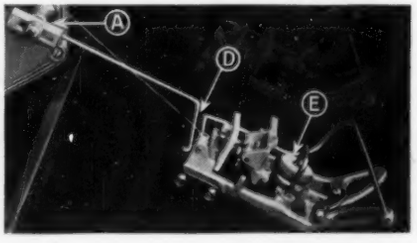


Fig. 4 Bail D is moved close to Tension Bracket and Clamp A set to nearly balance the Bail. No extra tension is needed at E.

When machines are fitted with the early type of Breakage Lever Clamp, which did not have the adjustment feature, it may be necessary to add Breakage Lever Counterweight 50-518-11X to balance the Lever when running fine yarn.

It is bad practice to add tension in order to hold down the Breakage Lever. Extra tension makes hard packages, strains the yarn, and in the case of weak or fine yarn causes unnecessary end breakage. With the Breakage Lever properly located and adjusted, counts of yarn finer than 100/1 can readily be wound. For this type of winding we recommend the use of the regular bottom tension, Tension 90-107F for the top Tension, Felt Washer WA-1004 and either WA-600 or WA-663 Tension Weights.

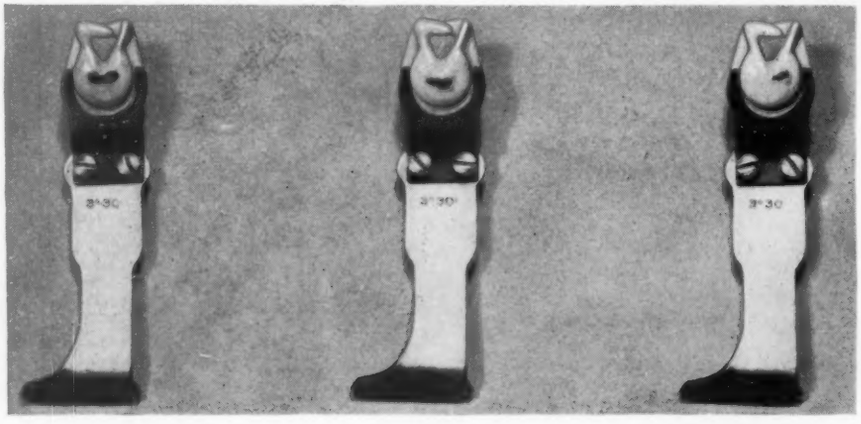


Fig. 1 Left, carbon smudges uniformly at bottom of V, so Guide is correctly set. Center, smudge is below V, so Guide Holder should be bent forward. Right, smudge is on right-hand side, so Holder should be bent counter-clockwise.

*Reg. U.S. Pat. Off. September, 1947

See our Catalog in TEXTILE WORLD YEARBOOK

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WASHER AND DYE PADDER at The Textileather Corp., Toledo, O., utilizes 91 corrosion resistant Inconel covered rolls. Designed by H. L. Perry, plant engineer, for handling automobile upholstery fabric. Capacity 3320 yards per hour. *Fred Christen & Sons Co.*, Toledo, built this equipment in 1940. Inconel covered rolls were fabricated by *The Youngstown Welding & Engineering Co.*, Youngstown, O.

WHEN you need a metal that will stand up in all dyeing processes, investigate Inconel*.

Its 80% nickel content assures resistance to strong alkalies, chlorides and reducing acids; its 14% chromium content prevents harmful attack by many oxidizing acids.

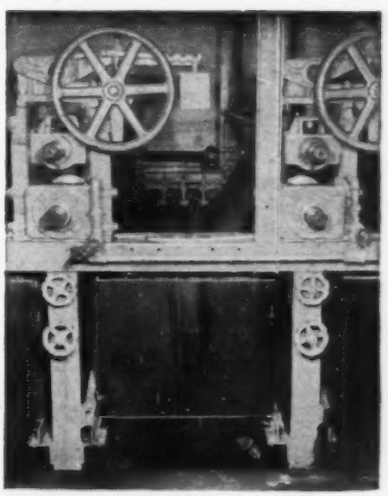
Inconel stands up against all types of dyes . . . acid and acid chrome . . . direct, vat, sulfur and developed colors. It resists corrosion by dilute hypochlorites and by sizing or other compounds and solutions used to impregnate fabrics. Peroxide bleaches have little effect on Inconel, and the alloy itself — unlike many other metals — does not harmfully accelerate decomposition of the bleach.

Having greater strength and toughness than structural steel, and possessing excellent fabricating and welding properties, Inconel makes possible the construction of extremely rugged, long-lived equipment.

Inconel is available in standard mill forms . . . in sheet and strip . . . in rod, bar, plate and tubing. Let's not forget castings, either. They're available too. And for equipment requiring plate thicknesses of 3/16" and heavier, you can get Inconel-clad steel . . . at a substantially lower price than solid Inconel.

Detailed information on corrosion resistance, mechanical and working properties, and typical uses of this versatile nickel alloy is contained in Technical Bulletin T-7, *Engineering Properties of Inconel*. A copy is yours for the asking. Drop us a line on your letterhead, and we'll see that it's sent promptly.

*Reg. U. S. Pat. Off.



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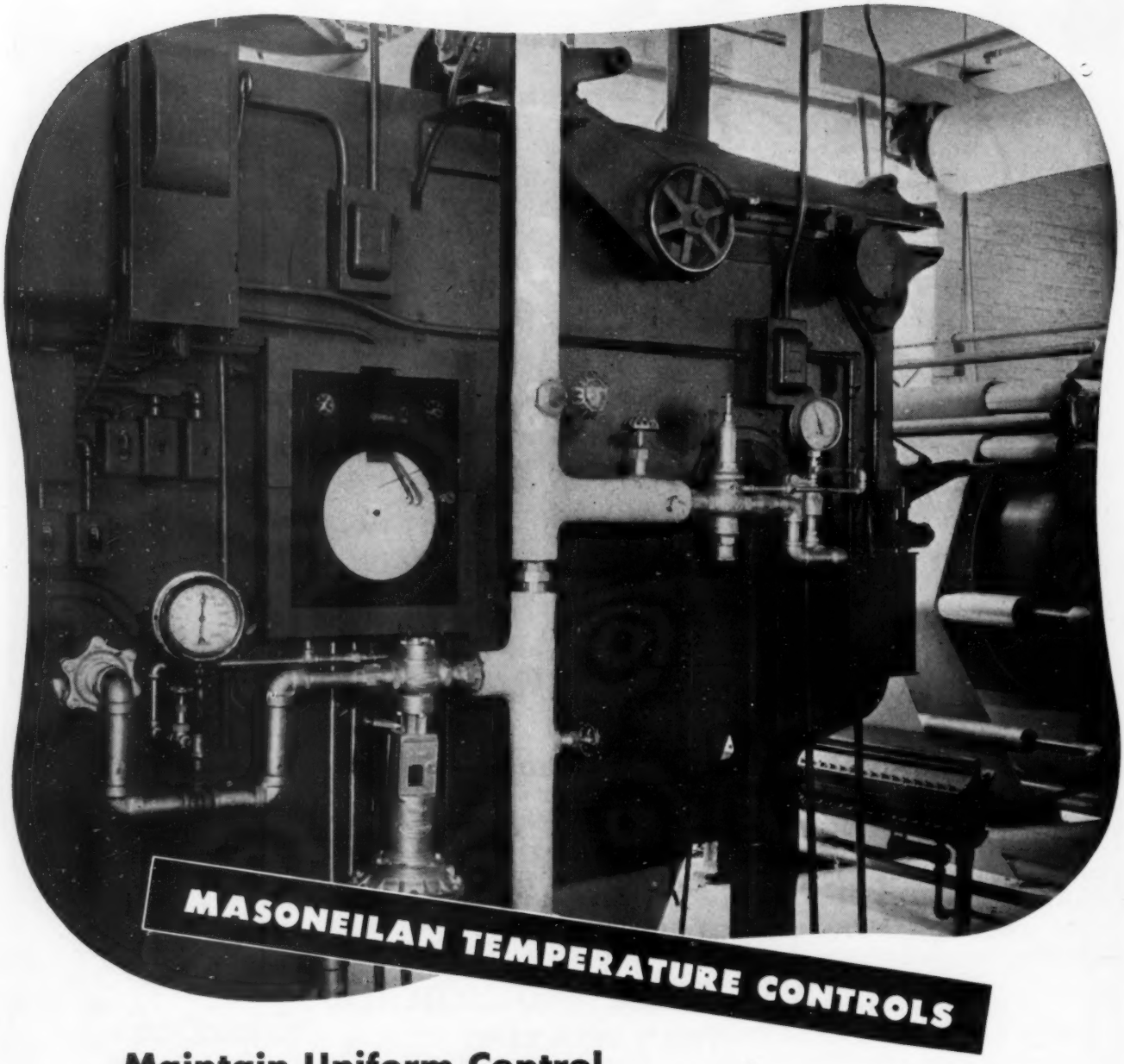

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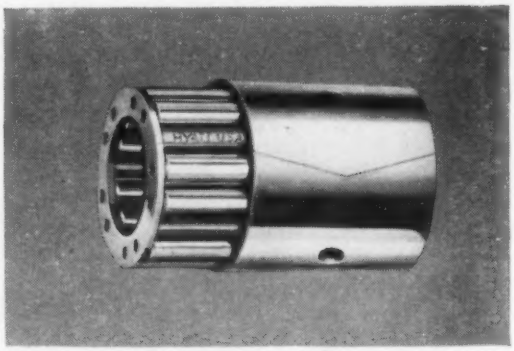

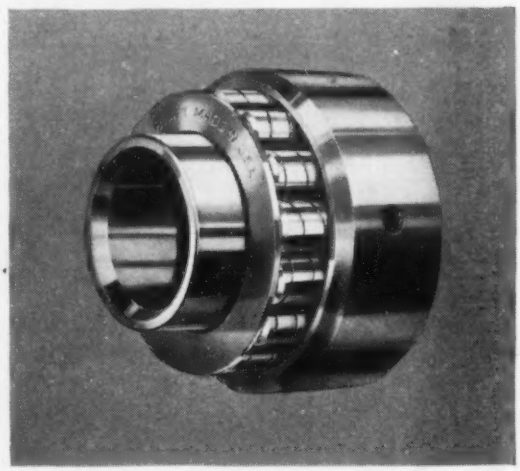

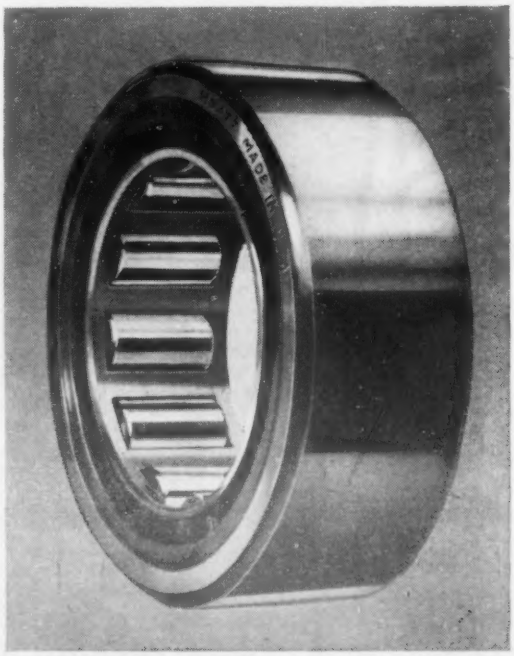

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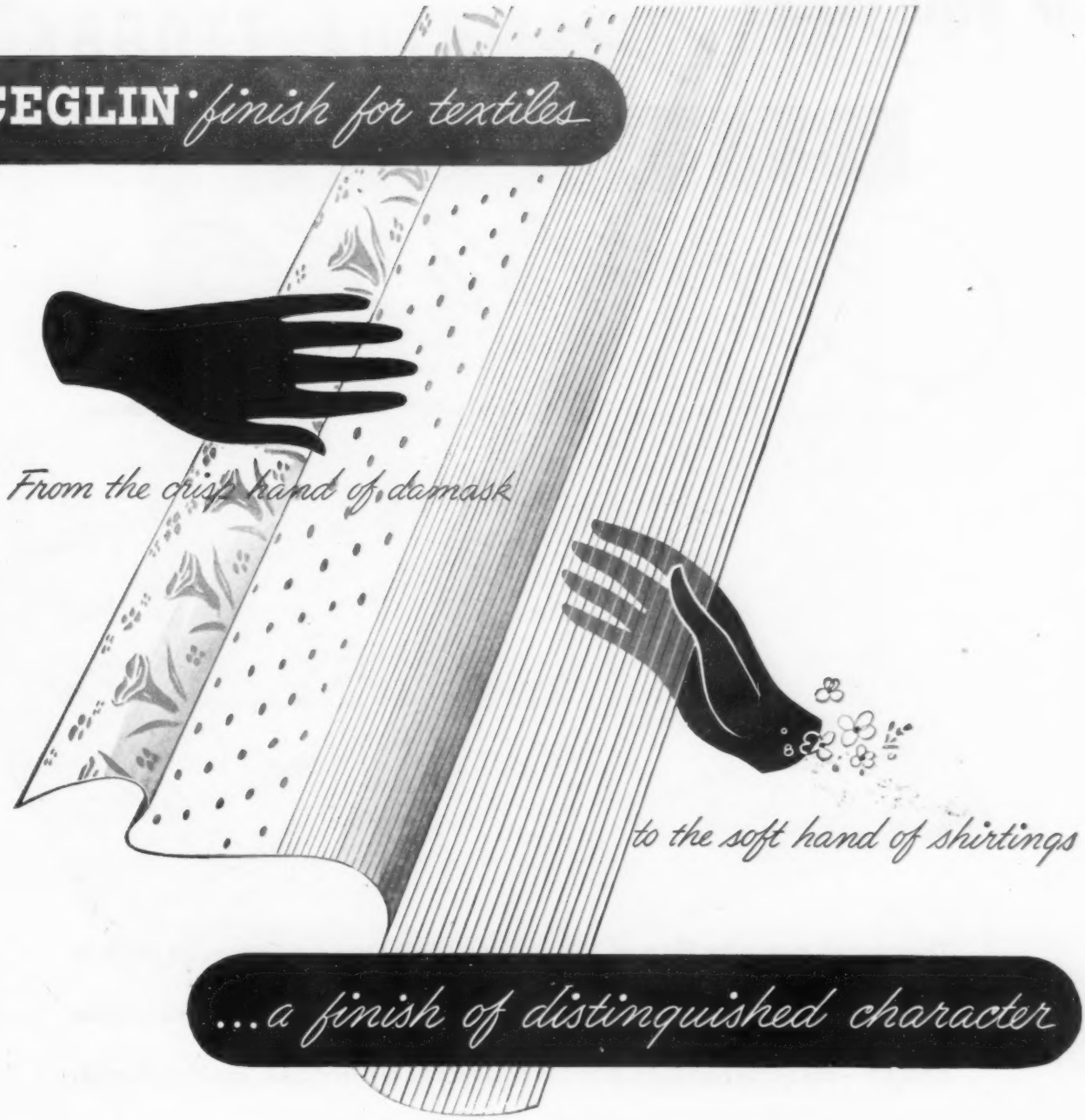

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- **makes possible a wide range from crispness to softness**

These qualities are then a permanent characteristic of the finished textile and remain durable through repeated laundering. Write for technical booklet giving complete directions for uses and application.

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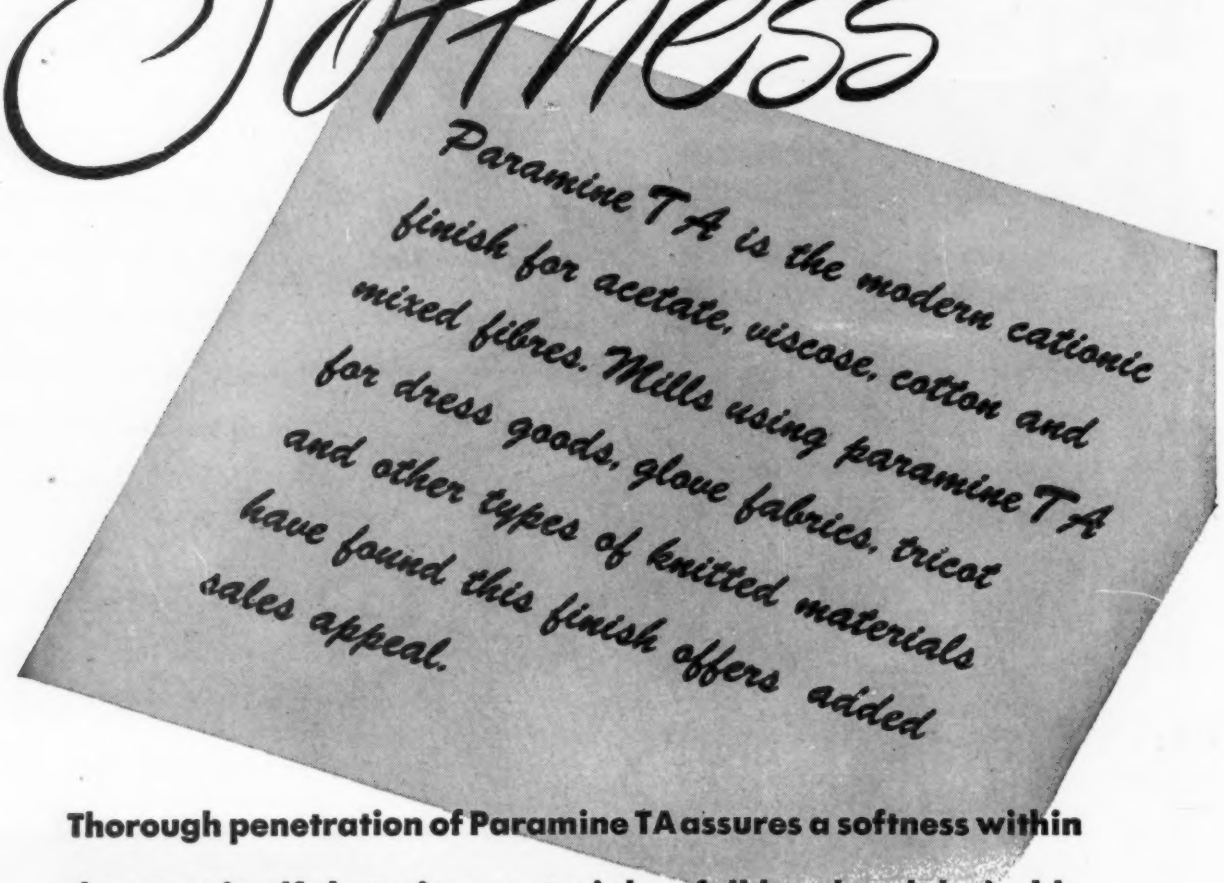
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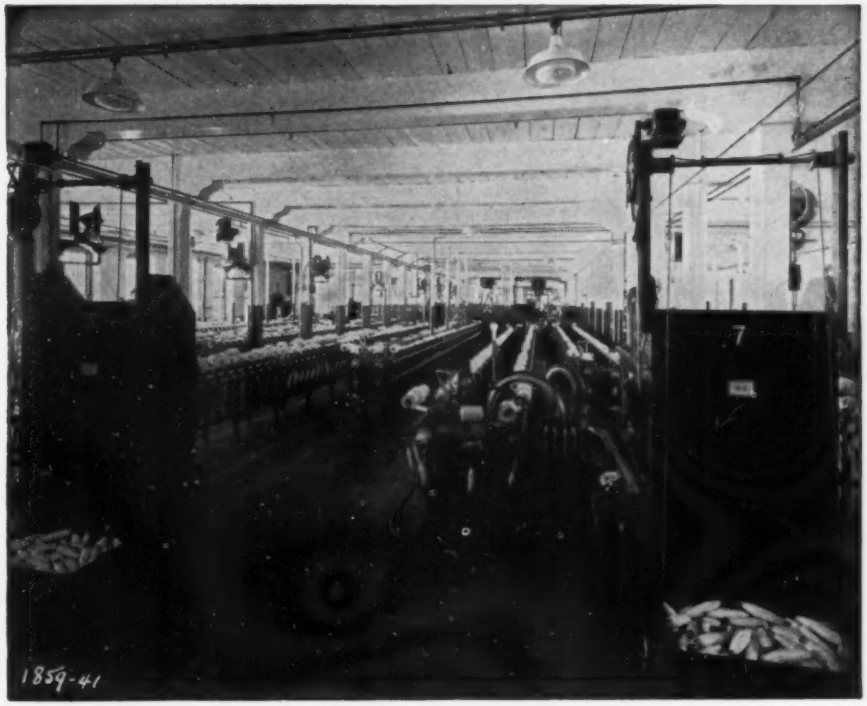

The operations required to run a cone winder are:

1. **Pick up bobbin**
2. **Find end**
3. **Put bobbin in position**

---

4. **Find end on cone**
5. **Tie ends**
6. **Start winding head**
7. **Hold thread out of traverse until cone is up to speed.**

The Abbott Automatic Winder requires only the first three operations to be done. The last four operations are wholly automatic.

Also, instead of a constant parade around the machine, the operator stays in one position sitting or standing.

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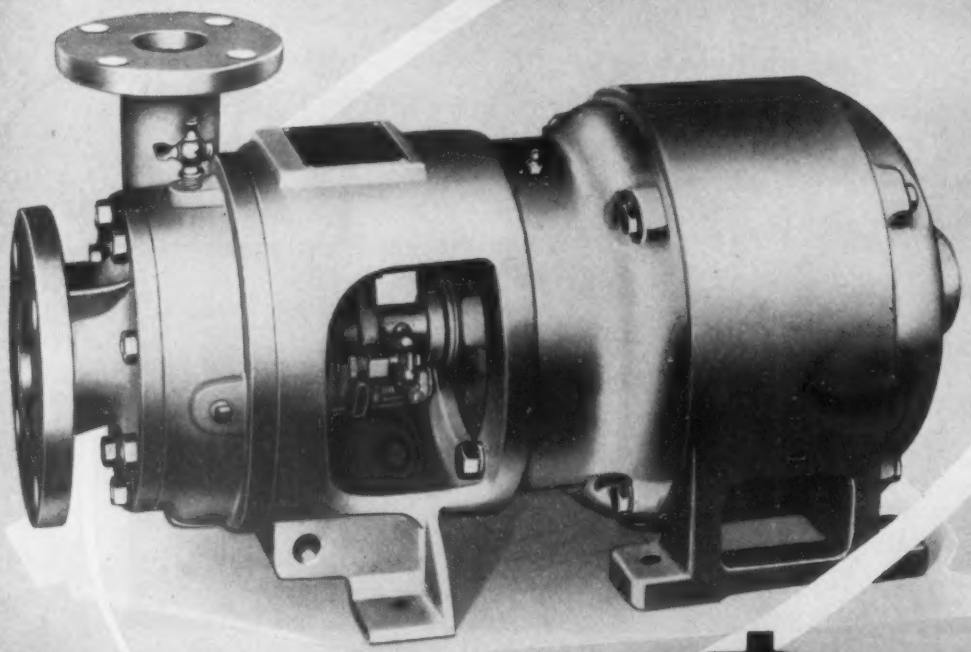
2 oz. bobbin..... 112 lbs. hour
4 oz. bobbin..... 224 lbs. hour
6 oz. bobbin..... 338 lbs. hour
8 oz. bobbin..... 448 lbs. hour

ABBOTT MACHINE COMPANY

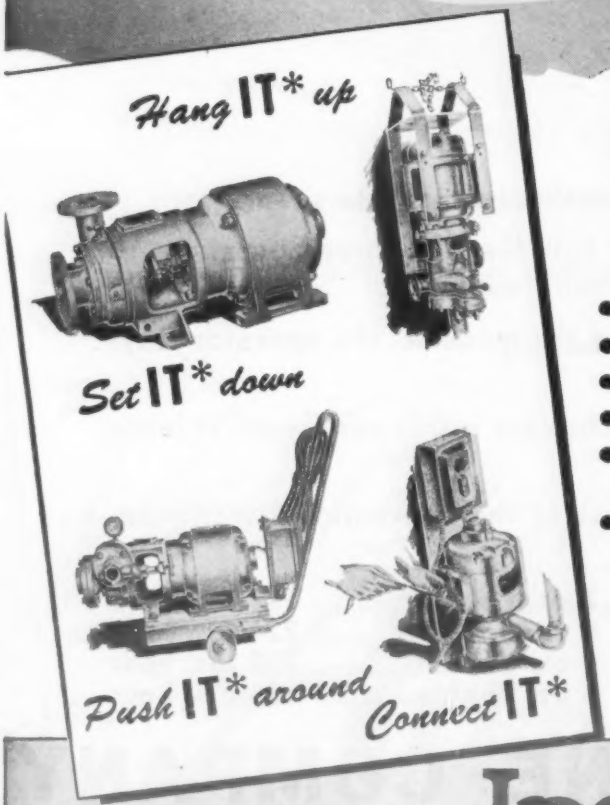
WILTON, N. H.

Southern Office ***Greenville, S. C.***

THE *Versatile* PUMP...



MOTORPUMP*



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- **Motor and pump on one rigid, extra-heavy shaft.**
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- **Works in any position.**
- **75 years of pump-building experience are built into the Motorpump.**
- **Heads to 600 ft. Capacities to 1800 gpm.**

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is becoming more generally available as Cyanamid's channels of raw material supply continue to open up.

AMONG CYANAMID PRODUCTS FOR THE TEXTILE INDUSTRY ARE . . .
AQUASOL* Sulphonated Castor Oils, NO-ODOROL* Finishing Oils, DECERESOL* OT Wetting Agents, Penetrants, Softeners, Finishes, Sizing Compounds, PARAMUL** 115 Water Repellent, and other specialties and Heavy Chemicals.

For low-cost chemical equivalent of distilled H_2O . . . FILT-R-STIL* Demineralizing Units.

** Trade-mark * Reg. U. S. Pat. Off.

Industrial Chemicals Division

AMERICAN CYANAMID COMPANY

30 ROCKEFELLER PLAZA • NEW YORK 20, N. Y.

Presenting . . .

ANOTHER IMPROVEMENT IN U S SHUTTLES FOR WOOLENS · WORSTEDS · BLENDS

Interchangeable die-cast brass eye permits five-minute changeover —reduces shuttle inventory

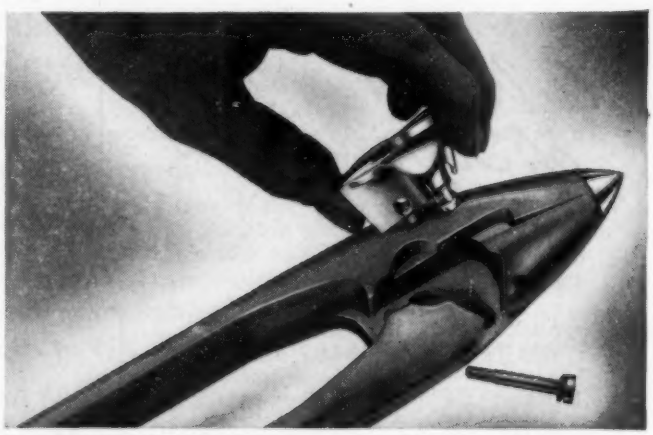
This improved U S Shuttle can be quickly adapted for weaving woolen, worsted, or blends by simply changing the shuttle eye – a five minute job that requires no special skill. The same standard shuttle can be equipped with a plain eye for woolens, Jackson Tension eye for worsteds, or a reverse eye for lefthand twist. Accurately dimensioned, each eye seats to a true fit without fussy adjustments. The same eyes can be used in any length shuttle.

This advanced feature lowers weave room costs by permitting full production with a limited number of shuttles. It also simplifies and speeds up normal maintenance.

Mill-tested under the most severe conditions, this new shuttle will materially increase the efficiency of your weaving operations – yet it costs no more. Be sure to see it before you place your next shuttle order. A U S representative will be glad to demonstrate its advantages.

AVAILABLE FOR PROMPT DELIVERY

DIE CAST BRASS EYE, formed to meet tolerances of .004 to .005 inch, permits complete interchangeability. Shuttle above is fitted for worsted or blend weaving, with eye equipped with Jackson Pad Tension Device.



IN LESS THAN 5 MINUTES, by removing one screw, lifting out worsted eye and inserting plain eye, shuttle is converted for weaving woolens.

U S BOBBIN & SHUTTLE CO.

PROVIDENCE, R. I.
GREENVILLE, S. C.
CHICAGO REPRESENTATIVE:
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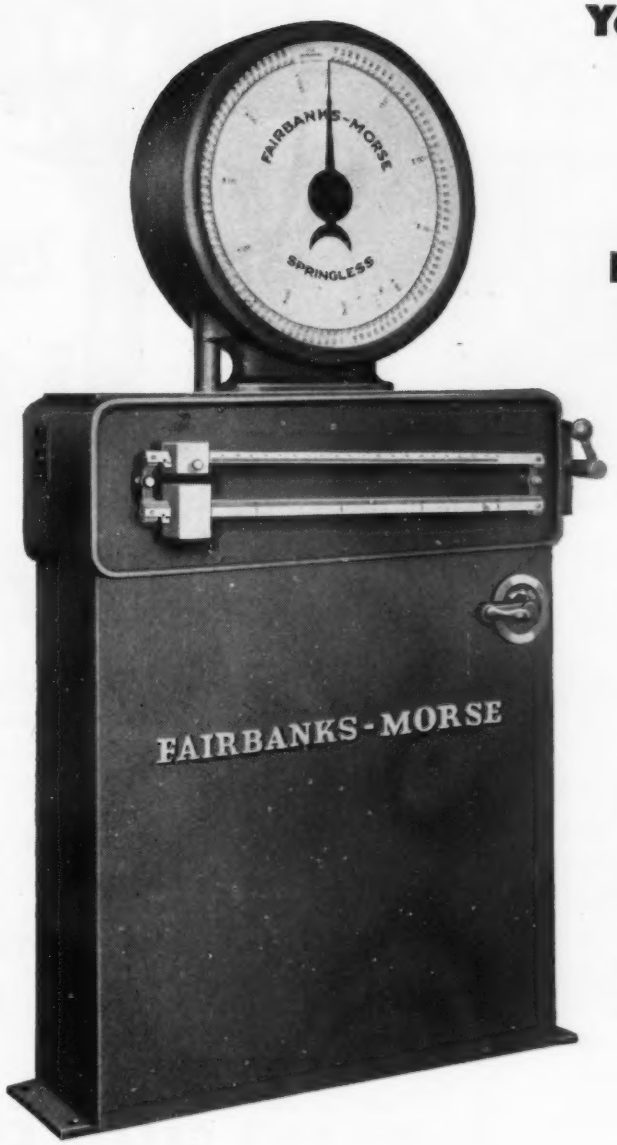
THE SEAL OF QUALITY AND SERVICE SINCE 1857 — US — ESTABLISHED 1857

Accurate Today and for Years to Come



FAIRBANKS-MORSE SCALES

It is not remarkable that Fairbanks-Morse Scales give enduringly accurate weighing service when you realize:

. . . that only materials of highest quality go into their manufacture—from their sturdy frames to their most minute working parts.

. . . that only skilled workmen are used to assemble them.

. . . that constant research is going on to make these scales even finer.

. . . that they have a heritage of 117 years of precision scale engineering.

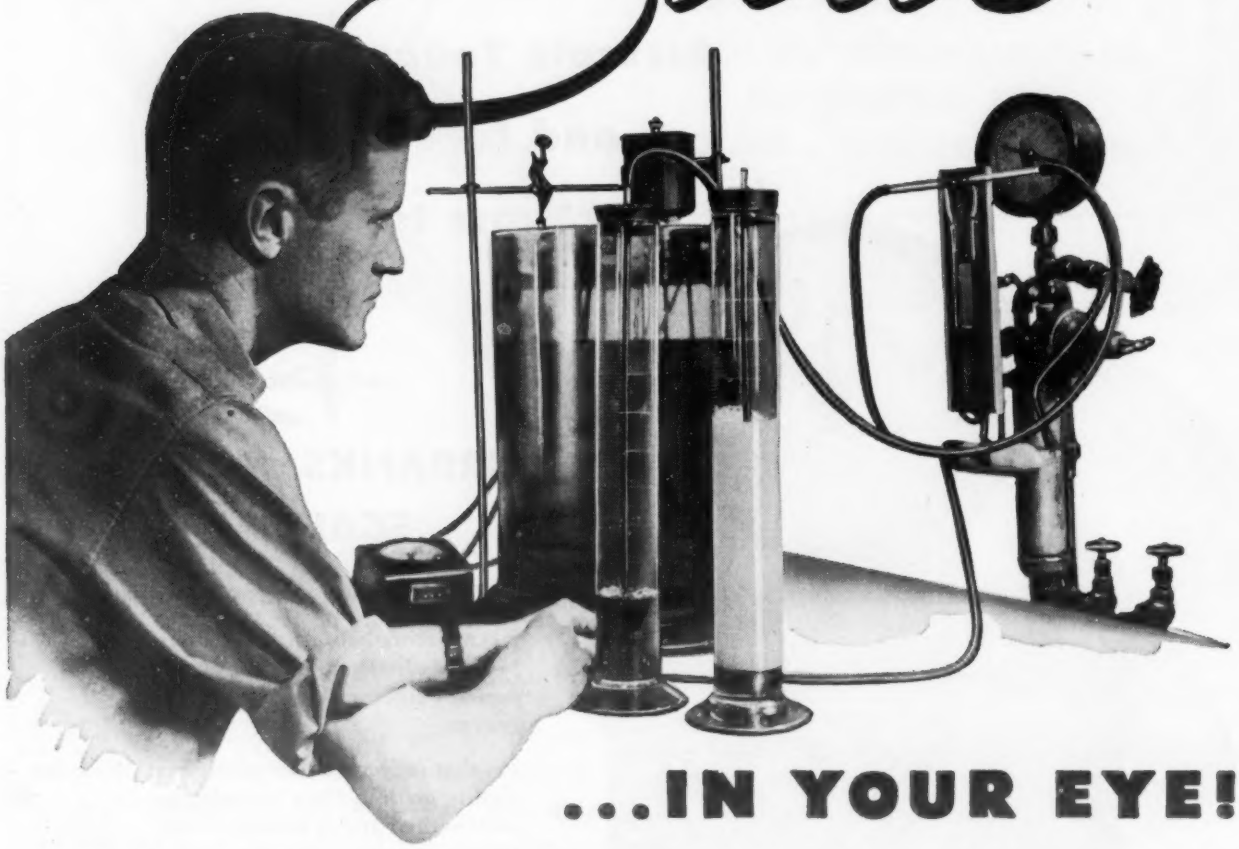
Fairbanks-Morse Scales will serve you with accuracy—today and for years to come. Fairbanks, Morse & Co., Chicago 5, Illinois.

Fairbanks-Morse

A name worth remembering

Diesel Locomotives
Diesel Engines
Generators • Motors
Pumps • Scales
Magnetos • Stokers
Railroad Motor Cars
and Standpipes
Farm Equipment

HERE'S *Suds*



...IN YOUR EYE!

The suds very much in your eye as you look at the photograph above is lubricating oil which foams badly and, if used in valuable equipment, constitutes a hazard to positive lubrication, which can increase maintenance costs.

At Sinclair Laboratories, skilled technicians, like the one shown above, study and test lubricating oils constantly for foaming characteristics. Through research in the study of additives, Sinclair provides anti-foam characteristics and assures positive lubricating film plus maximum heat dissipation for protection against wear and failure.

Through such painstaking research, Sinclair maintains production of lubricants of consistent high quality. Sinclair Laboratories and outstanding research are behind the dependable performance of all Sinclair Lubricants for Industry.

Sinclair Textile Lubricants
FOR MINIMUM FRICTION—
MINIMUM POWER CONSUMPTION

LILY WHITE OILS
For Spindles

NO-DRIP LUBRICANTS
For Coulier Motion
Rocker Arms, Gear and Camshaft Bearings,
and Half-speed Shock Absorbers

RUBILENE
For Air Compressor and Vacuum Pumps

BEARING GREASE AF
For Anti-Friction Bearings

SINCLAIR REFINING COMPANY • 630 FIFTH AVENUE, NEW YORK 20, N. Y.

SINCLAIR

Lubricants for Industry

FINEST CRUDES + EXPERT RESEARCH and MANUFACTURING CONTROL = OUTSTANDING PERFORMANCE

In Any V-Belt Only the SIDES Touch the Pulley

The Sides Do ALL the GRIPPING

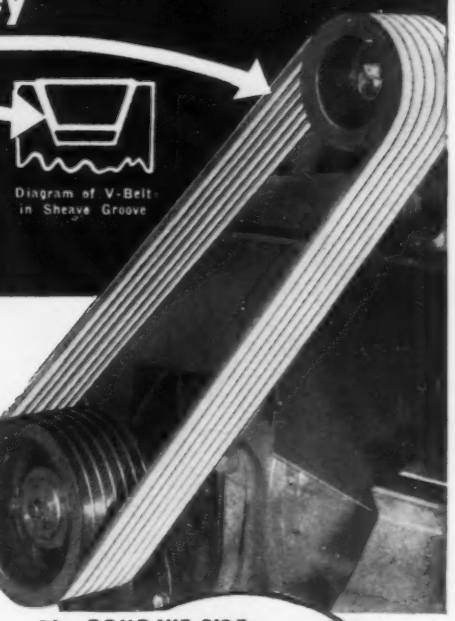


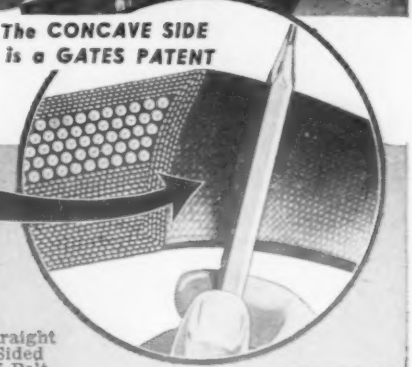
Diagram of V-Belt in Sheave Groove

— Naturally, It's the *SIDES* that GET the WEAR!

The moment you look at a V-belt in its sheave, you see that the *sides* do all the *gripping*—They get *all the wear* against the sheave groove wall. The sides *pick up* the load. They transmit that load to the belt as a whole. And then, once more, the sides—and the sides alone—take hold of the driven pulley and deliver the power to it.

This simple fact explains why you have always noticed that the *sidewall* of the *ordinary* V-Belt is the part that *wears out first.*

★Now See How the *Patented* CONCAVE SIDE *REDUCES Sidewall Wear - Lengthens Belt Life!*



The CONCAVE SIDE is a GATES PATENT

Clearly, since the sidewall is the part that wears out first, anything that prolongs the life of the sidewall will lengthen the life of the belt. The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the *middle* of the sides. They show also why the Patented Concave Side greatly reduces sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

Straight Sided V-Belt

Fig. 1

How Straight Sided V-Belt Bulges When Bending Around Its Pulley

Fig. 1-A

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Fig. 2

Gates V-Belt with Patented Concave Sidewall

Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt Is Bending Over Pulley.

Fig. 2-A

No bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

★More Important *NOW* That Gates SUPER V-Belts are Available

Now that Gates *Specialized* Research has resulted in Super V-Belts capable of carrying much heavier loads—up to 40% *higher horsepower ratings* in some cases—the sidewall of the belt is called upon to do even *more work* in transmitting these heavier loads to the pulley. Naturally, with heavier loading on the sidewall, the life-prolonging Concave Side is more important NOW than ever before!

THE GATES RUBBER COMPANY DENVER, U. S. A.

"World's Largest Maker of V-Belts"

479

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks **IN ALL INDUSTRIAL CENTERS** of the U. S. and 71 Foreign Countries

Gates

THE MARK OF SPECIALIZED RESEARCH

How much is a valve worth?

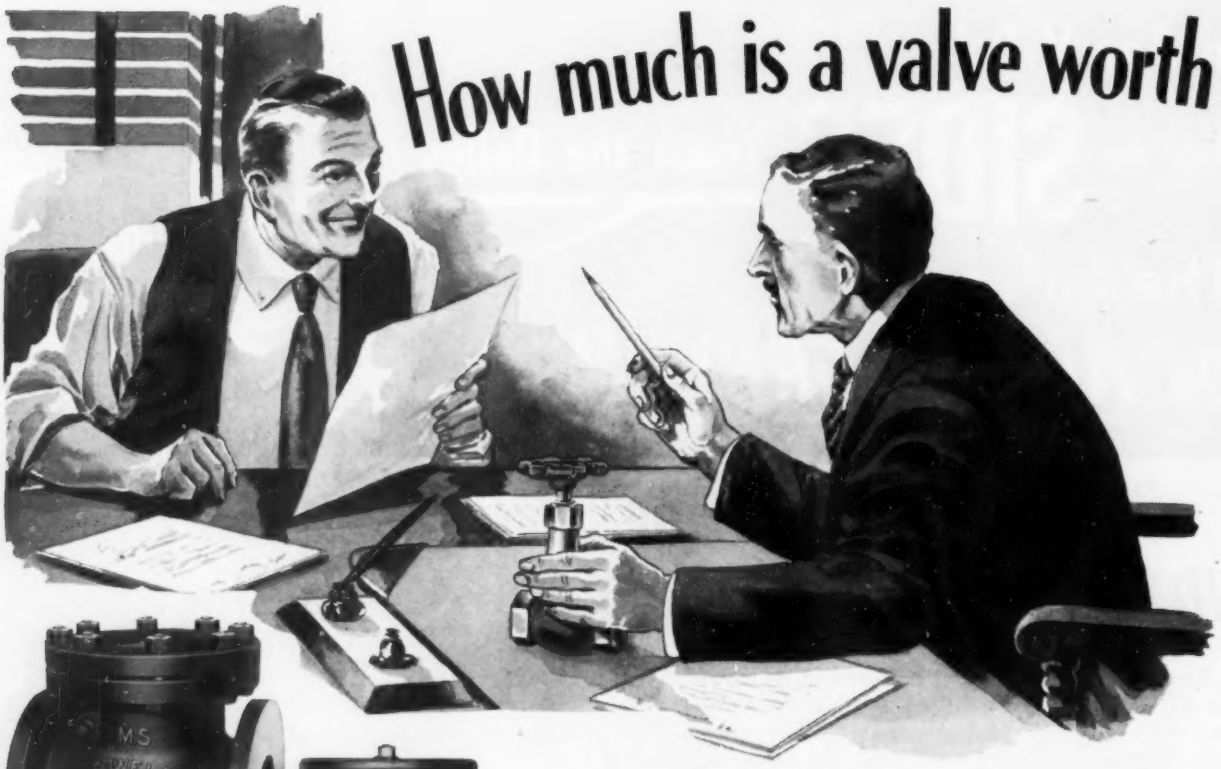


Fig. 1259—125-pound All Iron Swing Check Valve with bolted flanged cap, flanged ends and regrindable, renewable iron disc. Disc, when wide open, permits full, unobstructed flow through valve body.

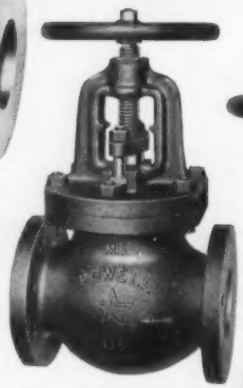


Fig. 457—125-pound All Iron Globe Valve with flanged ends, bolted flanged yoke, outside screw rising stem and regrindable, renewable iron seat and disc.

Fig. 1816—125-pound All Iron Gate Valve, with flanged ends, bolted flanged yoke, outside screw rising stem and taper wedge solid disc.

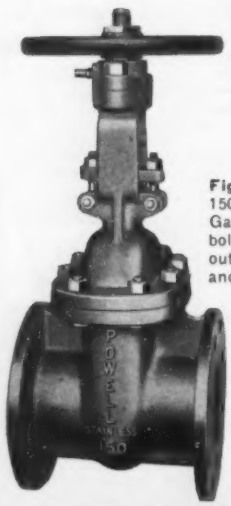


Fig. 2453-G—New, standard 150-pound Stainless Steel Gate Valve with flanged ends bolted flanged yoke-bonnet, outside screw rising stem and taper wedge solid disc.

The $64 question is not "what is the price of the valve," but "how much is it worth?"

And the measure of its worth is "will it do the job, how long will it give satisfactory service, and what will be the ultimate cost of maintenance?" For in addition to the cost of labor and materials in maintaining a valve, don't lose sight of the serious loss in production while a valve is "down" for repairs or replacement.

The Powell Line is so complete* that there's always a Powell Valve specifically adapted to do the job. Powell Valves are noted for long-life, satisfactory service. Powell Valves are designed to reduce maintenance and shut downs to a minimum.

*The Powell Line includes Bronze and Iron Valves of every required type, design, size and pressure; Cast Steel Valves of every type, in pressure classes from 150 to 2500 pounds; and, for the chemical and process industries, a complete line of Corrosion-Resistant Valves in the widest range of pure metals and alloys ever used in making valves.

Powell Iron Valves are available in all iron, iron body with bronze trim, and iron body with special alloy trim.

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Cincinnati 22, Ohio
DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

POWELL VALVES

Stymied for Results?
use CALCOGENE* Sulfur Dyes
CALCOGENE Sulfur dyes give exceptionally good results in the dyeing of rayon raw stock to be blended with wool. They are excellent, also, for use on cotton-rayon blends to produce blue and green elements on Scotch plaids.
The CALCOGENE group embraces a wide range of low-cost sulfur dyes. Their superior wash-fastness recommends them for work clothes fabrics, sports apparel and for coverts, ticking and ginghams.
Your CALCO representative will be glad to advise you on the many varied applications of CALCO sulfur dyes. CALCO CHEMICAL DIVISION, AMERICAN CYANAMID COMPANY, Bound Brook, New Jersey.
New York, Chicago, Philadelphia, Boston, Charlotte, Providence.
Calco
Reprints of this advertisement suitable for framing and without text will be sent on request.
* Trademark

here's what it takes

TECA, Eastman *crimped* acetate staple, is a fiber that puts life in a weave—gives it a naturally lofty hand—lasting resistance to wrinkles—a resistance to shrinkage that cannot wear off. That's why all-TECA weaves are now in the picture. And why so many new constructions have higher TECA percentages.

Consumers look for these TECA advantages—just as mill men look to this uniform staple for fine spinning qualities on any system, and for smooth running behavior on their looms.

EASTMAN—*crimped acetate rayon*

For further information about TECA, consult A. M. Tenney Associates, Inc., 10 East 40th St., New York, sales representatives for TENNESSEE EASTMAN CORPORATION (Subsidiary of Eastman Kodak Company), KINGSPORT, TENNESSEE.

Two P&H Hevi-Lift Hoists team up to carry rolls up the incline from finishing room to sheet tearing room.

For *NON-STOP* Production

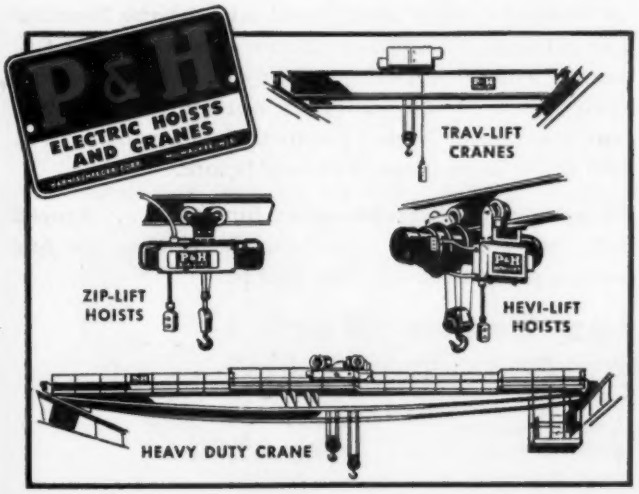
Move your textiles *"Thru-the-Air!"*

● No delays this way! Lifting or lowering at one point—as from station to station right through production—your goods move quickly, effortlessly — just by pressing buttons!

That's *"Thru-the-Air"* handling — via P&H Electric Hoists. Not only does this low cost handling put a stop to lags; it eliminates rehandling, makes the most of your floor space.

It's *clean* handling, too — adaptable to all textile operations.

Write to see how *"Thru-the-Air"* handling has saved for other textile mills. Better yet, call a P&H Hoist Engineer and see what it will save for *you!*



The *"Extras"* Are Standard Equipment, Added Values on P&H Electric Hoists

- Shaved gears for lifetime service . . . all bearings grease-sealed.
- Motors specifically designed and built by P&H for hoist service . . . high starting torque, frequent reversals, etc.
- Effortless push button control (variable speeds available on larger models).
- Transformer provides 110 volts at the push button.
- P&H's true motor ratings assure against failure at full capacity loads and speeds.

P&H ELECTRIC HOISTS
4644 West National Avenue
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HARNISCHFEGER CORPORATION
HOISTS • WELDING ELECTRODES • MOTORS • P&H • EXCAVATORS • ELECTRIC CRANES • ARC WELDERS

C&K says it again, as in '38...

"Small Steps are Easy..."

EACH YEAR—REPLACE AT LEAST 10%* OF YOUR LEAST EFFICIENT LOOMS

*That 1938 figure of 10% needs to be marked up, today, with this one condition firmly in mind:

TOTAL DEPRECIATION, as of now, *is not figured fully or accurately* unless you FIRST figure the full duration and accelerated rate of wartime depreciation . . . and then add the rate of postwar depreciation.

This will probably peg the basic percentage figure for *your* replacement fund somewhat higher than 10%. But it will still be a *small and easy step* . . . in any *systematic* replacement fund definitely earmarked for new weaving equipment.

And it's shrewd business to work out your own loom-replacement percentage *now.* For then you are set up to bridge (without unexpected stretch) the financial gap between your present looms—and the new C&K Looms which will swiftly return your investment with their higher speeds . . . easier operation and lower maintenance . . . higher production of finer fabrics . . . and fewer loom-stops than ever before.

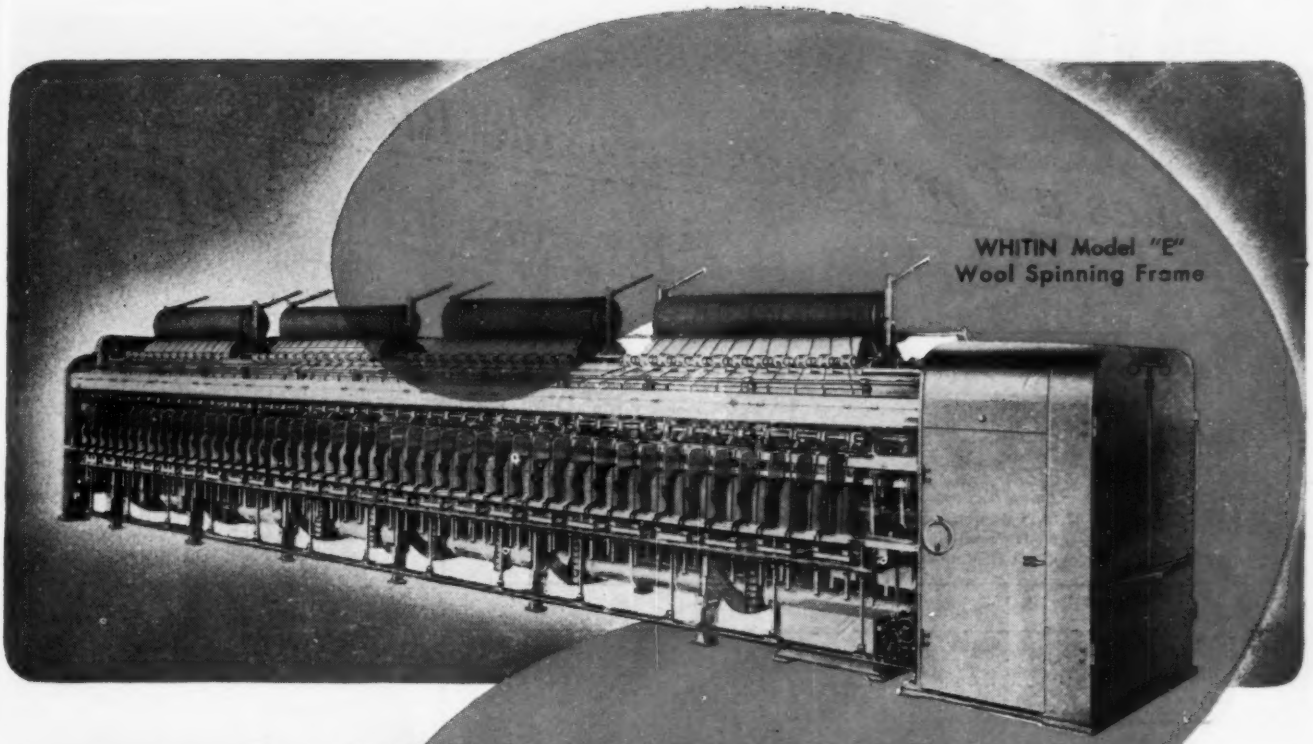
So set up a *tangible* replacement fund *today* . . . figured fully and accurately . . . and you have taken the *first* easy step to future weaving profits.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N.C. • ALLENTOWN, PA.

CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

between Today's Knowledge . . . and Tomorrow's Looms



WHITIN Model "E"
Wool Spinning Frame

THERE'S NO QUESTION . . .

about the increasing usage of Whitin Wool Spinning Frames.

Mill after mill has found its way to more profitable operation through the installation of Whitin large-package wool spinning frames. There are definite reasons why these Whitin Spinning Frames are being used to such great advantage:

HIGHER PRODUCTION: Continuous, rather than intermittent spinning is an outstanding characteristic of this machine and, within reasonable limits, twist does not affect yield. These two facts, plus infrequent doffing, result in increases in production of from 100 to 300% over other spinning methods.

FLEXIBILITY: Changes in draft, direction of twist and the build of the package can easily be effected by simple adjustments. The weights of yarn to be spun can also be readily changed. A wide range of worsted effects, from lofty to lean, can be obtained by varying the settings.

ECONOMY: The uniformity and evenness of the yarn produced results in yarn of increased strength. This fact, together with the use of large packages, reduces knots up to 75% when compared with competitive spinning methods. The result is less time loss in doffing, burling, spooling, winding and twisting. Even greater economies can be obtained when the large frame packages are re-wound on Whitin-Schweiter Automatic Filling Bobbin Winders.

Write for descriptive literature on both Whitin Model "E" Wool Spinning frames . . . and Whitin-Schweiter Automatic Filling Bobbin Winders.

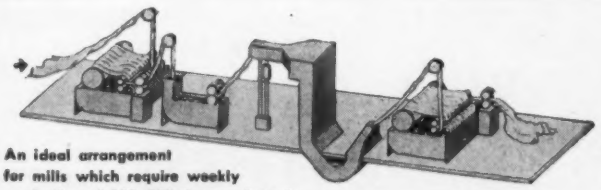
Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS
CHARLOTTE, N. C. • ATLANTA, GA.

DU PONT

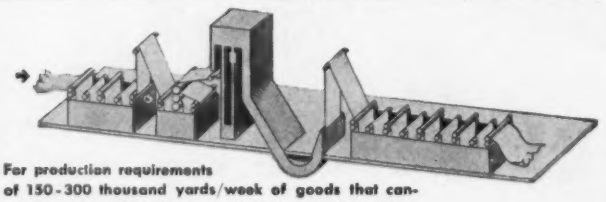
has a Continuous Peroxide Bleaching System for most bleaching needs

ONE-STAGE ROPE SYSTEM



An ideal arrangement for mills which require weekly production of 200-500 thousand yards of goods averaging 3 yards/pound or lighter.

ONE-STAGE OPEN-WIDTH SYSTEM



For production requirements of 150-300 thousand yards/week of goods that cannot be rope-processed—especially successful with a wide range of heavy fabrics.

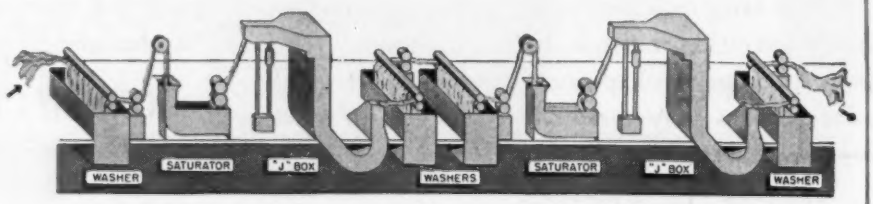
LOOK INTO THESE SYSTEMS NOW!

You'll find them . . .

1. **Just what you need** to produce quality bleaching at lower over-all costs.
2. **Flexible**—readily adapted to speedy, uniform processing.
3. **Easy to set up,** operate and control.
4. In use by **many leading mills.**

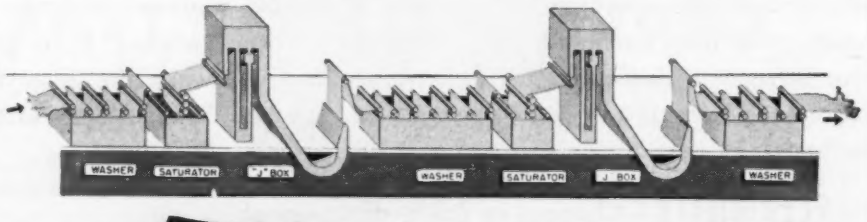
TWO-STAGE ROPE SYSTEM

For processing a wide variety of fabrics; print cloths, sheetings, shirting, shade cloth, etc.; handles 1-¾—1-½ million yards/week of 4 yd. goods.



TWO-STAGE OPEN-WIDTH SYSTEM

For cloth that cannot be handled in rope form. Operating speed generally between 75 and 125 yards/minute. Any degree of bleaching obtained by adjusting peroxide strength.



Send for this NEW BOOK!

It shows typical continuous bleach layouts designed to fit the requirements of various plants. For a copy just write: E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.

DU PONT CONTINUOUS PEROXIDE BLEACHING

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DU PONT

YOU know that reducing the waste of costly stock to a minimum is an important factor in your mill . . . the smaller the percentage of waste, the greater your production—and profit!

Precision-made Tuffer Card Clothing reduces waste at the beginning . . . reduces raw stock losses by improving the quality of your carding . . . increases the yield of your cards. The benefits of these primary advantages are felt throughout your entire mill. A proper start means better yarns at lower production costs.

A Howard Bros. representative will gladly examine your card clothing—and make workable recommendations that will cut down excessive stock losses.

HOWARD BROS. MFG. CO.
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TUFFER CARD CLOTHING **IMPROVES PRODUCTION ALL ALONG THE LINE**

Vanesta

The Starch Stabilizer

Stops Gelling
Improves Flow
Gives Uniform Consistency

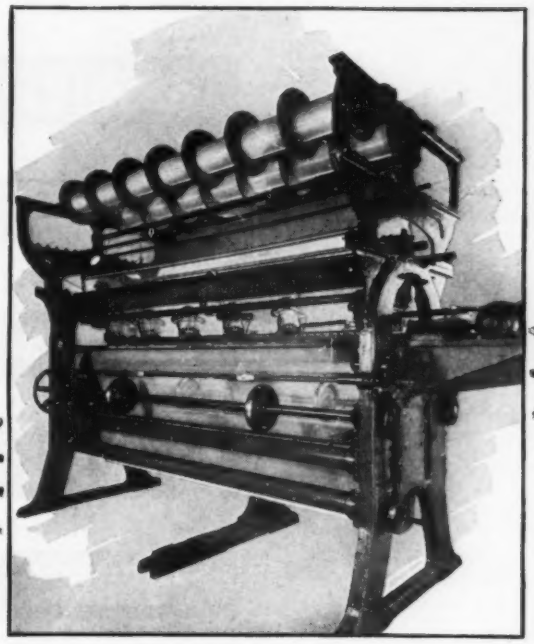
Sample on request

R. T. VANDERBILT CO., INC.

230 Park Avenue, New York 17, N. Y.

LATEST IN RASCHEL-TYPE WARP-KNITTING MACHINES!

NEW HIGH SPEEDS!



WIDE VERSATILITY!

UNUSUAL ACCESSIBILITY!

Three outstanding features combine to make the *Kidde* Knitter the last word in Raschel-type machines:

1. Exceptionally high sustained speeds—even on complicated patterns. These speeds are made possible by a radically new drum drive that combines the advantages of index feed and worm feed—and by a new motion on needle bars, replacing the conventional piston type movement.

The *Kidde* Knitter is specifically designed to withstand the wear and tear of these high speeds . . . as well as stresses of knitting such materials as rubber. Framework is of tubular construction . . . extra strong, extra rigid. Anti-friction bearings are liberally used.

2. Wide versatility. The *Kidde* machine will knit practically any type of thread, yarn or elastic . . . in simple or intricate patterns. A few examples: ELASTIC FABRICS for corsets, girdles, brassieres. DRESS FABRICS. VEILINGS and NETTINGS. CURTAINS. NARROW FABRICS: edgings, braidings, laces. SHOE CLOTH. KNITTED OUTERWEAR FABRICS for sweaters, polo shirts.

You can use single or double needle bars—and can knit a full 100 inches.

3. Unusual accessibility. With the *Kidde* Knitter, setting up and changing of patterns are quick, simple jobs.

The entire swing bar assembly can be adjusted as a unit, both vertically and horizontally. Stroke of the latch needles and guide needles can be readily adjusted . . . without need for changing cams. The full cloth roller can be easily removed from the side of the machine.

Get all three advantages with the *Kidde* Knitter!

Write for descriptive literature—or better still, see for yourself what the *Kidde* Knitter can do. A machine is in operation at our Bloomfield plant—we'll be glad to arrange a demonstration. Just write for an appointment.

The word "Kidde" is the trade-mark of Walter Kidde & Company, Inc., and its affiliated companies.

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

Better Woolens assured with NOPCO* FUA

New Multi-purpose, Self-Fulling, Self-Scouring Wool Oil

NOPCO FUA...

assures anti-static properties that eliminate fly in carding.

assures a rounder, loftier roving.

assures prolonged life for leather rub rolls and condenser tapes.

assures freedom from rust or corrosion.

assures improved spinning, performing equally well on mules or frames.

assures extremely low ether extraction.

assures a product that acts like an oil during carding and spinning and like a soap in wet finishing.

assures easy removal of tar or pitch.

assures economy in wet finishing, eliminating need for soap or detergent in fulling and scouring.

assures minimum need for alkali.

assures dependable aid to level piece dyeing.

assures protection from discoloration or odor in yarns and grey goods on long storage.

NOPCO FUA is all fatty (no mineral oil) and non-oxidizable. In these—and many other ways—this new Self-Fulling, Self-Scouring Oil increases woolen production, as revealed by actual tests in many leading mills. Write for technical bulletin, which fully describes NOPCO FUA's multiple aid to better processing.

NOPCO CHEMICAL COMPANY

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Boston • HARRISON, N. J. • Chicago • Cedartown, Ga. • Richmond, Calif.

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NOPCO FUA

SELF-FULLING, SELF-SCOURING WOOL OIL

NOW YOU CAN BUY IT!

Yes, Nopco FUA is now available. Orders are being filled promptly. If you have not already tried Nopco FUA, we suggest that you request a working sample today.

EVOLVED THROUGH RESEARCH NOPCO Reg. U. S. Pat. Off.

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NORMA-HOFFMANN PRECISION BEARINGS

are the Right Answer

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Rugged—thoroughly dependable for carrying thrust and radial loads.

NORMA-HOFFMANN ROLLER BEARINGS

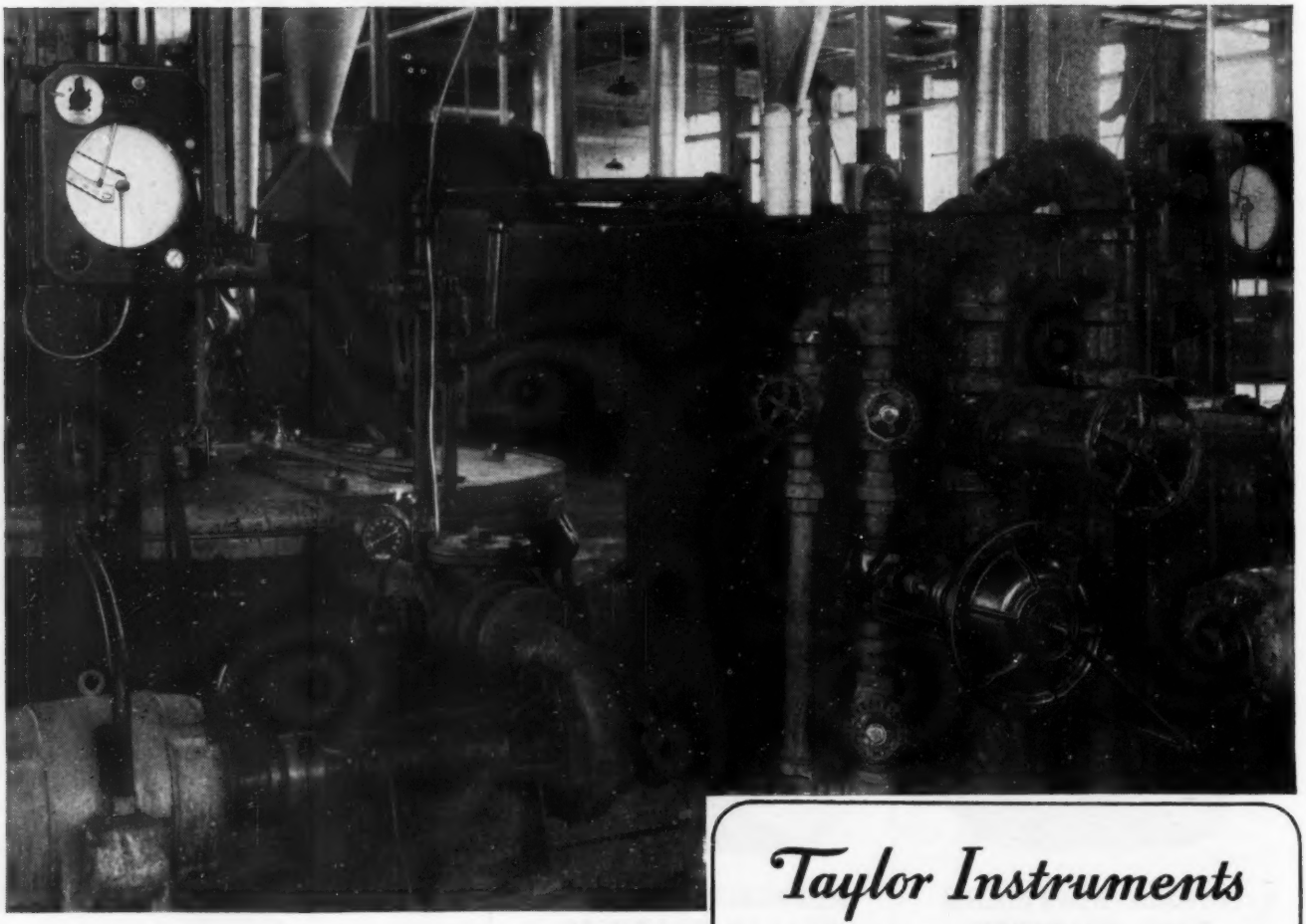
Short, cylindrical roller design . . . heavy-duty bronze retainer . . . lowest possible co-efficient of friction under heavy load.

Norma-Hoffmann heavy-duty Bearings improve the design and performance of products wherever they are used. They are dependable, give friction-free smoothness and quietness of operation. Available in a wide range of sizes for every load, speed and duty. Write for catalog and engineering assistance.

NORMA-HOFFMANN
***Precision* BEARINGS**
BALL • ROLLER • THRUST

NORMA-HOFFMANN BEARINGS CORPORATION
STAMFORD, CONNECTICUT
FIELD OFFICES: New York, Chicago, Cleveland, Detroit, Pittsburgh, Cincinnati, Los Angeles, San Francisco, Seattle, Phoenix

Raw Stock Dyeing + ACCURATE TEMPERATURE CONTROL = Greater Uniformity



HERE'S just one example of what we mean. This battery of Taylor Fulscope Controllers is helping Marshall Field turn out batch after batch of uniform dry stock at their Fieldcrest Division mill, Spray, North Carolina. The temperature-sensitive element of the controller insures accurate temperatures in accordance with the predetermined set point. It also *precisely times* the dyeing cycle temperature after it reaches the predetermined temperature set point.

This accurate Taylor Control System keeps quality up and costs down in these four ways:

1. By assuring uniformity of dyeing.
2. By assuring matching of shades.
3. By assuring thoroughness of dyeing.
4. By cutting steam and labor costs.

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

Whatever your processing problems may be—we can work out a dependable, economical control system to solve them. When you're ordering dyeing equipment, specify "Taylor Equipped As Usual" or ask your Taylor Field Engineer. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Ontario.

* * *

Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

Lanese*

releases capital tied up in long-range inventories

Contrasted with natural fibers—subject to adverse weather, crop conditions and whims of Nature—Celanese* cellulose acetate staple fiber, sold under the trademark Lanese, is unaffected by the vagaries of Nature. Uniform quality is scientifically controlled. The greater the use of Lanese in textile operations the less capital need be tied up in inventories; mills can depend upon regular month-to-month flow of raw materials and upon constant quality.

Lanese is scientifically controlled from the chemical production of the cellulose acetate fibers to the cutting of the staple lengths. Staple lengths and physical characteristics are uniform. There are no off grades. Because of this there is appreciably less waste with Lanese.

POINTERS TO LANESE

Exceptionaliy stable price structure—no need for hedging operations.

Lanese adds important sales advantages when used in combination with cotton, wool or viscose process rayon.

Greater versatility of weaves.

Where the proportion of Lanese is dominant, fabrics gain in richer hand and color . . . improved draping qualities.

Greater dimensional stability.

Celanese* Lanese*

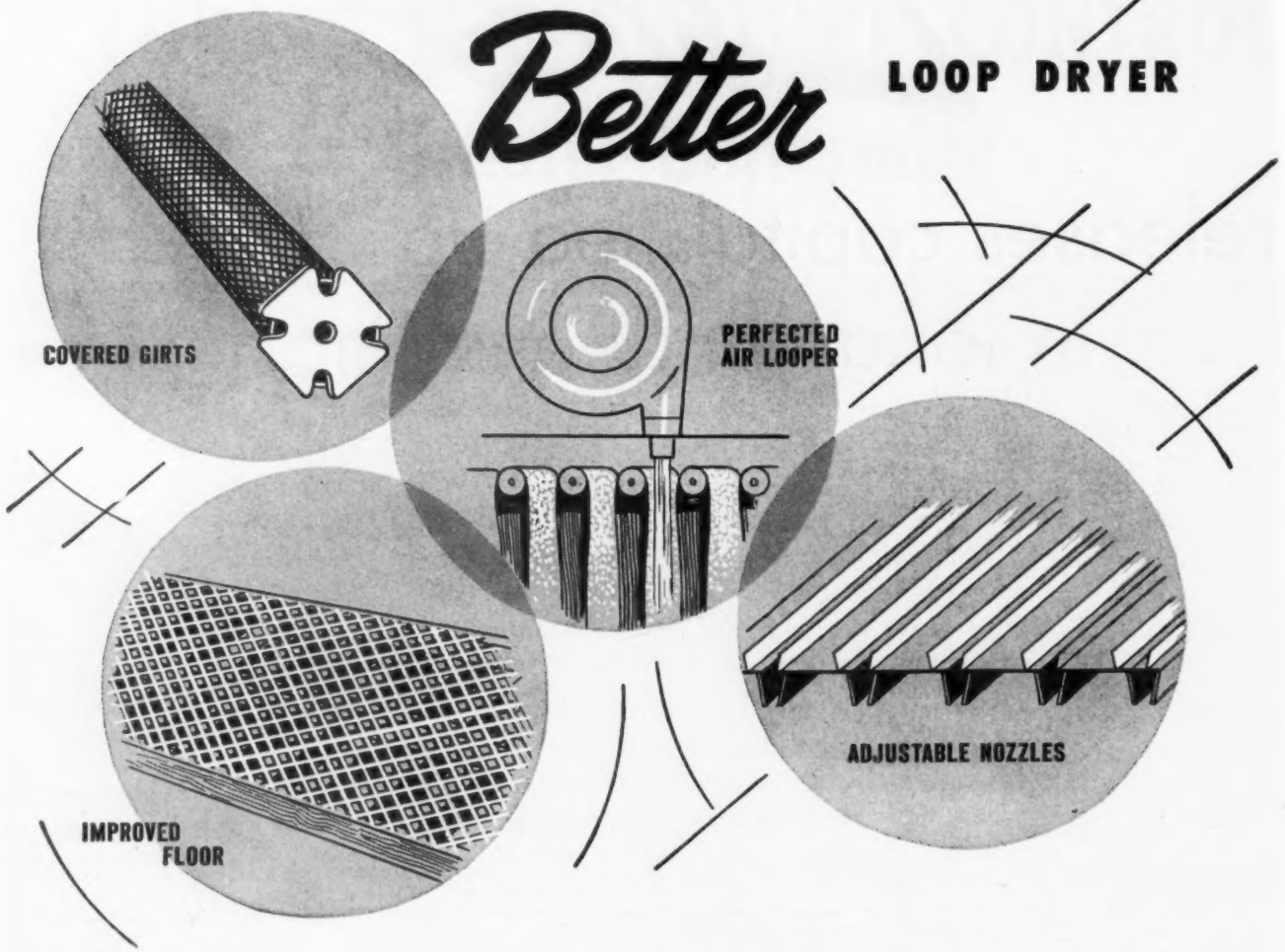
SYNTHETIC STAPLE FIBER

*Reg. U.S. Pat. Off.

CELANESE CORPORATION OF AMERICA, 180 MADISON AVE., NEW YORK 16, N. Y.

Branch Offices: PHILADELPHIA 7, 12 South 12th Street • CHARLOTTE 2, 1106 Liberty Life Building • BOSTON 10, 140 Federal Street

IT'S THESE "LITTLE" THINGS THAT MAKE A *Better* LOOP DRYER



On the surface, you may be inclined to say to yourself, "a loop dryer's a loop dryer", and let it go at that. While the principle may be the same, there is a big difference in loop dryers. There are incorporated in the latest model Proctor loop dryers many refinements that definitely make for superior performance. For example, girts are covered with a treated covering that prevents cloth from adhering and eliminates the danger of "stick marks" in the finished goods. In addition to being covered, girts are designed to revolve at given intervals so that no part of the material is in contact with any part of the girt for any appreciable time.

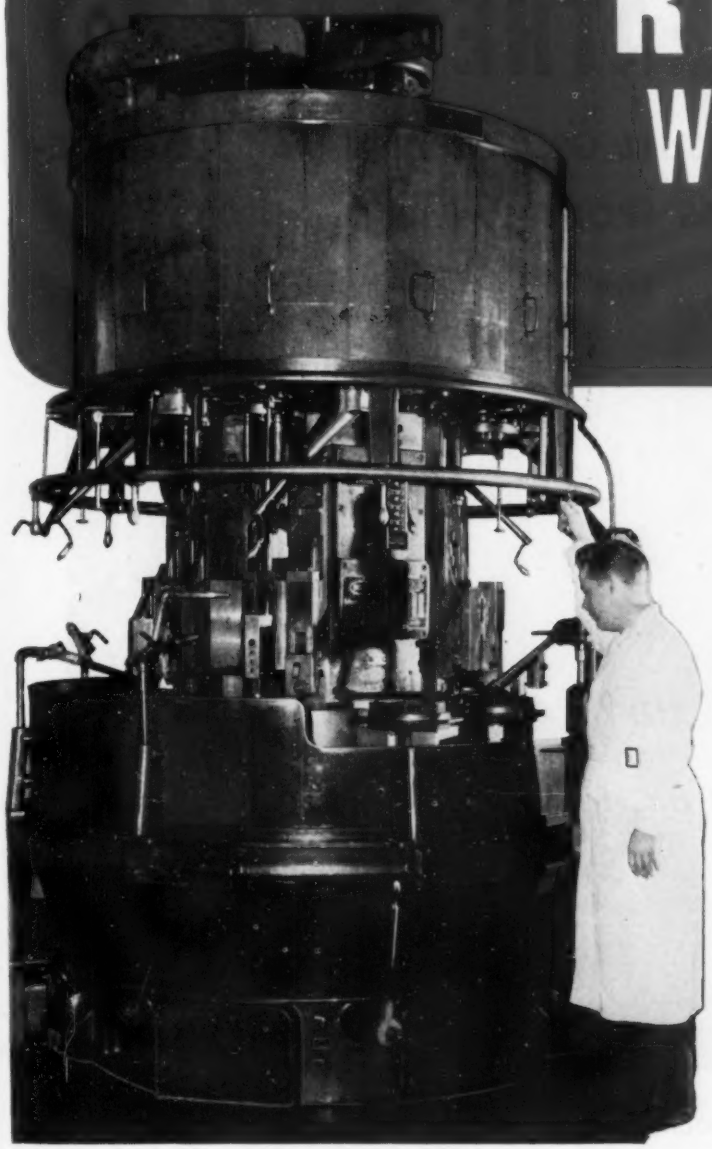
To aid in forming smooth loops in certain classes of goods, the perfected air looper—another Proctor feature—is proving invaluable. A carefully timed jet of air is forced down into the loop as it begins to form, thus assisting in forming perfect loops, even in "difficult" material.

Because certain types of fabrics require more or less air than others—it is possible to regulate the air circulation in the Proctor dryer by means of adjustable nozzles. An exterior adjustment makes this a simple operation and also permits the operator to determine the exact amount of air circulation taking place inside the machine. Swirling and creases are eliminated, resulting in better finished fabrics.

A strengthened, stamped mesh floor simplifies cleaning and prevents undue accumulation of lint inside of the dryer.

If you are not already fully aware of the operating advantages offered by the Proctor loop dryer—you really owe it to yourself to investigate this machine without delay. Write today for details.

PROCTOR & SCHWARTZ, INC.
PHILADELPHIA 20, PA.



REDUCE Work Stoppage *at Machine* SORE SPOTS

with B* Engineered Parts

Annoying and costly, yes—these frequent breakdowns of machines because of Recurring Parts Failure. Yet, the loss due to work stoppage and production lag is infinitely greater than the parts costs.

You need not necessarily put up with parts that break too fast or wear out too frequently. Like in most cases, a few parts cause the greater percentage of breakdowns. A simple redesigning job or a change in type of metals may solve the problems. Let Bouligny engineers, fresh from wartime's advanced techniques and metals, counsel with you! Their experiences in solving Recurring Parts Failure may make a big difference in your profit and loss statement—under today's standards of production. Your inquiry is cordially invited, for prompt attention!

* "ONE OF THE NATION'S FINEST"

Above is one of the famous Bullard "Multi-Au-Matic" machines—a Bouligny lathe that does automatic precision machining on eight parts at a time. This rapid producer is part of the reason for Bouligny's low costs in special metal working problems requiring heat treating of steels, precision machining, grinding and electro-plating.

Precision Parts : : Complete Assemblies

Manufacturing Division

R. H. Bouligny Inc.

ENGINEERS OF LONGER LASTING MACHINE PARTS

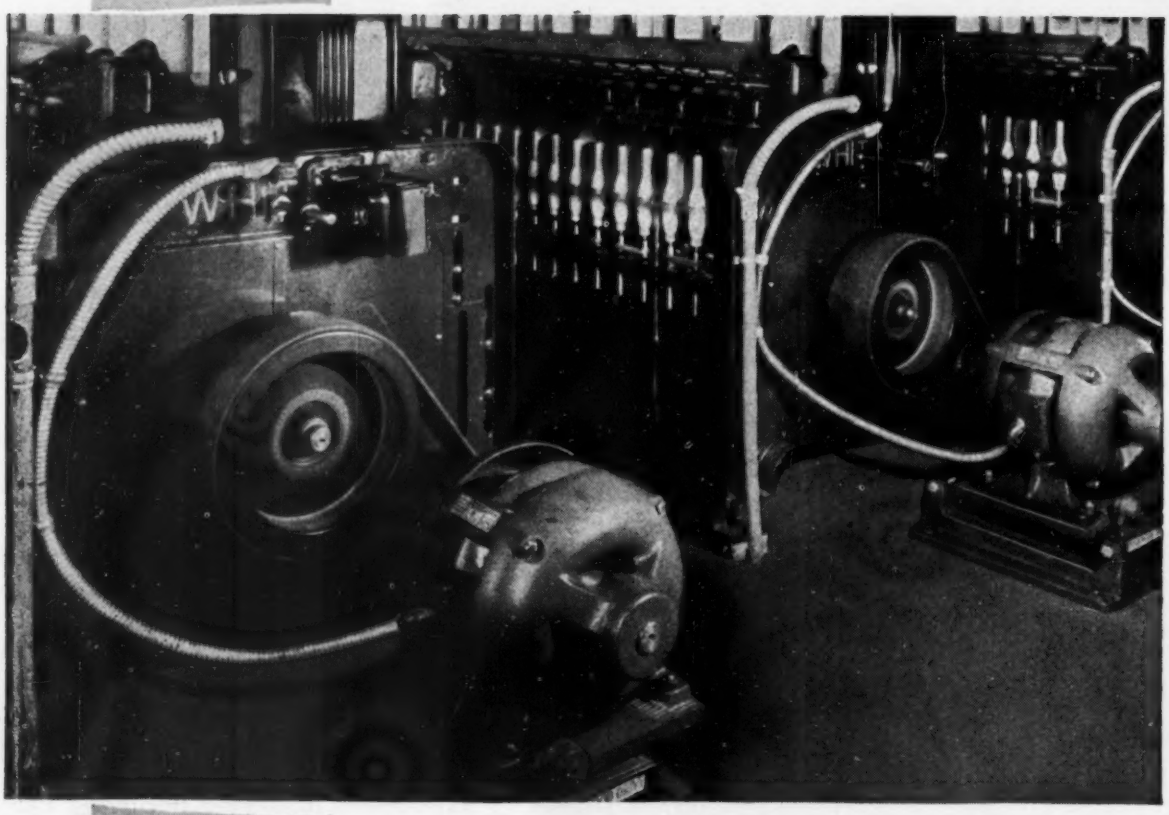
Charlotte, N. C.

RHOADS

Tannate

LEATHER BELTS

ASSURE GREATER, UNIFORM YARDAGE— LESS SPOILAGE . . .



TANNATE-ROCKWOOD DRIVES ON SPINNING FRAMES

in carding room, spinning room or on your looms.

Rhoads TANNATE Leather Belts withstand high temperatures, humidity, machine oils and many chemicals; carry full load when damp; require fewer take-ups and less maintenance; have a high power transmitting capacity; are 1/3 to 1/2 stronger than most oak belts; are extremely flexible.

Follow the lead of many other Textile Mills . . . equip your machines with Rhoads TANNATE Leather Belts and get peak production with lower costs.

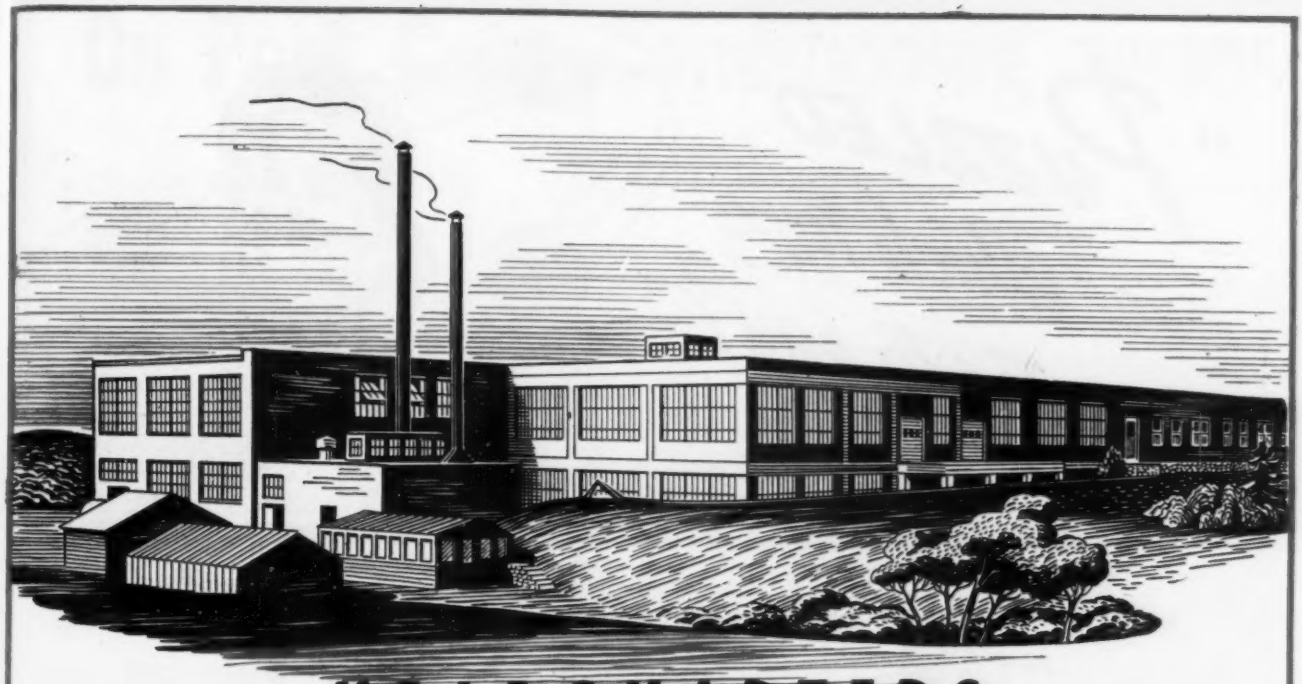
PRODUCERS OF FINE LEATHER FOR 245 YEARS

J. E. RHOADS & SONS

35 NORTH SIXTH ST., PHILA. 6, PA.

NEW YORK • CHICAGO • ATLANTA

ESTABLISHED 1702



HEADQUARTERS FOR SIZE

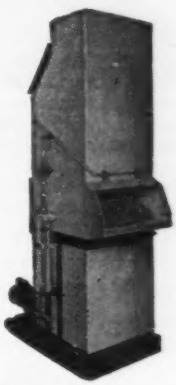
THE FACT that we are the nation's largest producers of sizing is important only as indicating the superior qualities of SEYCO Sizing in textile production.

SEYCO Sizing is scientifically formulated to produce a tough, elastic, pliable film, which lays the fibers smoothly; reducing friction, breakage and shedding to the minimum.

SEYCO Sizing is sufficiently anchored by proper penetration, but is easily removed. Its deliquescent feature protects against over-drying. SEYCO Sizing is the result of more than 40 years experience and constant research.

Many mills tell us that SEYCO Sizing makes for fewer interruptions in production and greater uniformity of product.

Our technical service men, backed by our large modern laboratories, will gladly cooperate with you in getting best results from SEYCO Sizing.



Write today for full information about the revolutionary Niagara Twist-Setter. *No moving parts.* Use it with SeyCo Penetrants for best performance.

SEYDEL-WOOLLEY & CO.

TEXTILE CHEMICALS

748 RICE STREET • ATLANTA, GA.

PENETRANTS • SIZING • SHUTTLE DRESSING • SOFTENERS • ALKALIS • TWIST SETTER MACHINES •

SEYCO

"Puzzled over which type of motor to buy?"

In 80% of the Cases, open squirrel-cage induction motors meet the need. They fit most drives, and can be obtained in numerous standard and special designs to meet varying conditions of starting torque, slip, etc. They are also the most economical type to buy and to maintain. Allis-Chalmers builds induction motors in sizes from ½ to 10,000 hp — or higher, if needed.

For Tough Starting Conditions, wound-rotor induction motors are recommended. Their high starting torque, at comparatively low starting current, and their controllable speed characteristics are desirable in drives for conveyors, grinding mills and other tough starting assignments. Compact, accessible Allis-Chalmers wound rotor induction motors range in size from 5 to 10,000 hp.

For Slow Speed, direct-connected drives as low as 75 rpm, or other constant speed applications at higher rpm, synchronous motors are a good solution. They are of particular benefit when a system's power factor is low, since they can be furnished for operation at either unity or leading power factor. From 40 hp to 50,000 hp and higher — in bracket bearing, pedestal bearing, or engine types.

Is d-c Available? Then adjustable speed operation is easily obtainable. Allis-Chalmers builds d-c motors from ½ to 10,000 hp and higher — for constant or adjustable speed duty in ranges of 6:1 and lower. By means of a source of d-c voltage, adjustable speed motors may also be designed to operate over a speed range as high as 30:1. Suitable for fans, elevators, etc.

Select from the Complete Allis-Chalmers Line!

NOT JUST FOLLOWING popular choice and using a standard squirrel cage induction motor. But the *right* motor for economy and efficiency.

That means an overall knowledge of *all* types of motors . . . their operation . . . limitations . . . maintenance. And there's where your A-C representative can be a big help. His recommendations are backed by experience . . . and the Allis-Chalmers motor he selects is *itself* backed by 50 years of experience in motor design and building. ALLIS-CHALMERS, MILWAUKEE 1, WIS. A 2304

1847 1947 A CENTURY OF SERVICE to Industry THAT MADE America Great

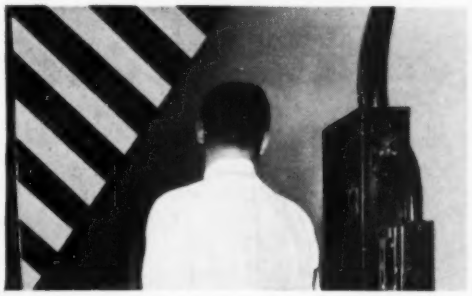
ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment-
Biggest of All in Range of Industrial Products

Du Pont Color Conditioning means

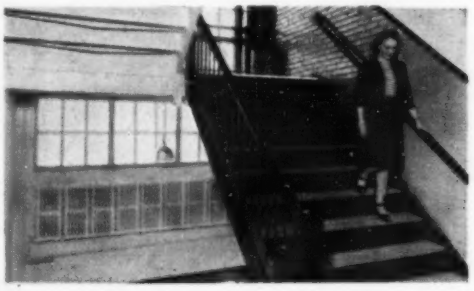
Greater efficiency • Added safety • Higher morale

VISIBILITY. Color conditioning reduces eyestrain and fatigue by reducing glare . . . by providing the correct degree of "brightness" within the worker's field of vision.



SAFETY. Hazardous areas are "pointed up" through the Du Pont Safety Color Code . . . helping prevent costly accidents. Colors and symbols also indicate location of first-aid and fire-protection equipment.

MORALE. A cheerful, pleasant environment gives workers a lift . . . pays off in better work. Color Conditioning in washrooms, cafeterias, etc., helps promote good employee-management relations.



FOR EVERY INTERIOR. Every part of your plant can gain through Color Conditioning. Stairways, offices, corridors, assembly rooms . . . this painting plan imparts an agreeable, efficient atmosphere to every interior.

Shaving cream packing room at the Boston plant of Gillette Safety Razor Company. Here, as elsewhere throughout the plant, Color Conditioning helps employees "look sharp, feel sharp, be sharp"!

MANY industries today are taking advantage of Du Pont Color Conditioning to increase employee efficiency, safety, and morale. This scientific painting plan improves the rate and quality of production, cuts maintenance costs . . . helps workers see better, feel better, work better. Find out how your plant can benefit through Color Conditioning. Send coupon to E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.

DU PONT
REG. U. S. PAT. OFF.

Color Conditioning

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

Send for free new 32-page book, "Color Conditioning for Industry"

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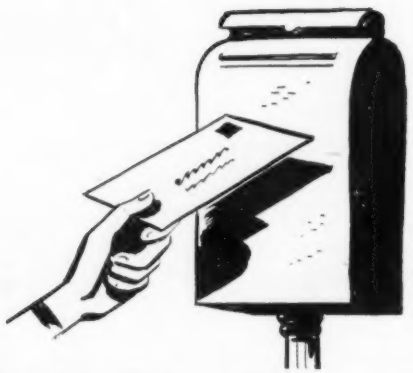
Rush Your Space Reservation Now for



TEXTILE INDUSTRIES' October "New Equipment and Processing Issue"

1,753 INQUIRIES PROVE EFFECTIVENESS

Do they read it? Ask the postman who lugged last year's mail! Both management and operating men showed their eagerness for more detailed information on what's new by making 1,753 inquiries direct to us on TEXTILE INDUSTRIES' *"New Equipment and Processing Issue"* of 1946. And remember—this figure covers only those inquiries *directed to us*, whereas names and addresses of manufacturers were given with all equipment and material descriptions!

TIMED RIGHT: With a current allocation of more than a half-billion dollars for the purpose, the Textile Manufacturing Industries are now in the midst of a vast program for plant expansion and equipment modernization.

Urgent objectives: improved production, lower operating costs, increased over-all efficiency.

If you can help textile mills achieve these objectives, then your sales message should be driven home to them in TEXTILE INDUSTRIES' *"New Equipment and Processing Issue,"* for this is the issue that will be read with absorbing interest by management and production men *throughout the entire textile field.*

FORMS CLOSE SEPT. 24: With the highest circulation in its history—87% concentrated directly on the men in the mills—TEXTILE INDUSTRIES' special October issue is a *must* for every manufacturer serving the textile field. Plan now to be well represented. Mail your space requirements immediately or contact the representative near you.

TEXTILE INDUSTRIES
Grant Building • Atlanta 3, Ga.

ABC ABP

W. R. C. SMITH PUBLICATIONS

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SOUTHERN POWER & INDUSTRY
SOUTHERN HARDWARE
SOUTHERN AUTOMOTIVE JOURNAL
ELECTRICAL SOUTH
SOUTHERN BUILDING SUPPLIES

There is a TEXTILE INDUSTRIES *advertising representative near you. Contact him by telephone, wire or mail.*

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settling decanting filtration ... are out

when you use Hooker Sodium Sulfide

In these days of soaring costs, few rayon manufacturers can indulge themselves in the luxury of time wasting, costly preparation of desulfurizing baths—especially when you can save all this with Hooker Sodium Sulfide. Hooker Sodium Sulfide is so free from impurities (an iron content as low as 8ppm. max.) that rayon plants are using the solution directly from the dissolving tanks. In some plants it is reported that they have added Hooker Sodium Sulfide directly from the drum into the desulfurizing bath. In either case the time consuming and costly process of settling and decanting or filtration are eliminated. There is no loss of chemicals in the disposal of sludge and no special equipment is required for disposal of high sulfide sludge wastes.

Fixed controlled Alkalinity saves Caustic Soda . . .

Another saving for you when you use Hooker Sodium Sulfide is in the caustic soda used for maintaining alkalinity of desulfurizing bath. Hooker Sodium Sulfide has a fixed controlled alkalinity. This means a substantial economy in the amount of caustic soda required to adjust alkalinity within the limits required.

If you have not yet tried Hooker Sodium Sulfide for your desulfurizing baths, we suggest you send for a trial shipment. It is sold in 90 and 350 pound steel drums.

SPECIFICATIONS:

HOOKER SODIUM SULFIDE, Na_2S

a light yellow colored solid in flake form, soluble in water, slightly soluble in alcohol, insoluble in ether.

ANALYSIS

Sodium Sulfide	60 to 62%
Sodium Chloride	1.5% Max.
Other Sodium Salts	2.0% Max.
Iron	8ppm. Max.
All other metals	1ppm. Max.
Water of Crystallization	36.5 to 34.5%

HOOKER ELECTROCHEMICAL COMPANY

14 Forty-Seventh St., Niagara Falls, N. Y.
New York, N. Y. Wilmington, Calif. Tacoma, Wash.

HOOKER CHEMICALS

7-353

Caustic Soda Muriatic Acid Chlorine

Paradichlorbenzene Sodium Sulfide Sodium Sulfhydrate

for Power or Process piping . . . everything's in the CRANE line

Valves, fittings, or pipe line accessories . . . pipe or shop-fabricated piping units . . . whatever you need for new installations or replacements . . . most likely Crane supplies it. And with good, dependable quality in every single item.

On this water treating installation, for example, here's how the complete Crane line helps simplify the whole piping job. You specify from one catalog . . . get everything on one order to your local Crane Branch or Wholesaler. From start to finish, the job moves fast and smooth . . . with good piping performance assured. Because when you standardize on Crane materials, you get this 3-way advantage:

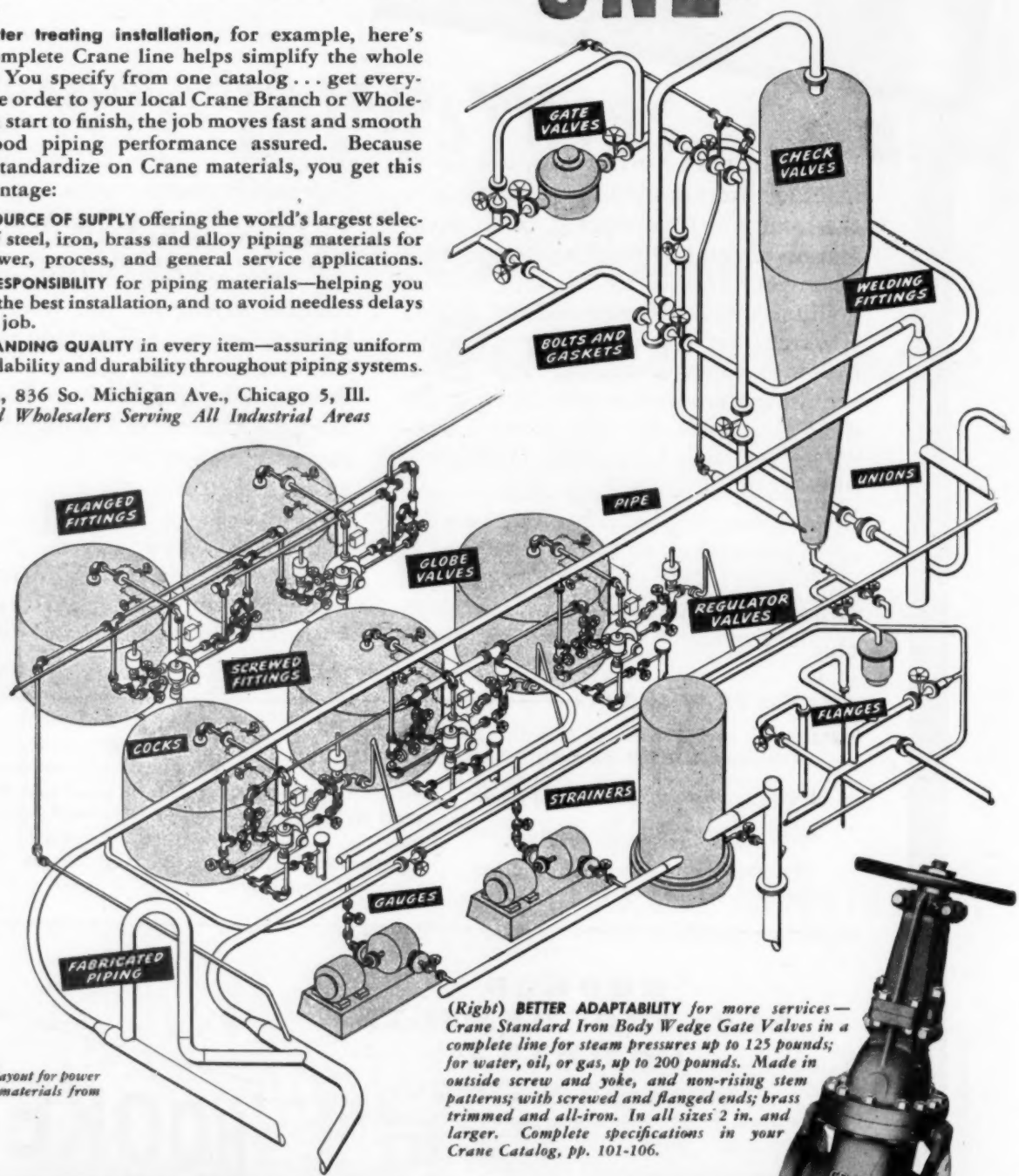
ONE SOURCE OF SUPPLY offering the world's largest selection of steel, iron, brass and alloy piping materials for all power, process, and general service applications.

ONE RESPONSIBILITY for piping materials—helping you to get the best installation, and to avoid needless delays on the job.

OUTSTANDING QUALITY in every item—assuring uniform dependability and durability throughout piping systems.

CRANE CO., 836 So. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

ONE
SOURCE OF SUPPLY
RESPONSIBILITY
STANDARD OF QUALITY



Water treating layout for power plant . . . piping materials from Crane.

(Right) **BETTER ADAPTABILITY** *for more services—Crane Standard Iron Body Wedge Gate Valves in a complete line for steam pressures up to 125 pounds; for water, oil, or gas, up to 200 pounds. Made in outside screw and yoke, and non-rising stem patterns; with screwed and flanged ends; brass trimmed and all-iron. In all sizes 2 in. and larger. Complete specifications in your Crane Catalog, pp. 101-106.*

EVERYTHING FROM . . .

VALVES • FITTINGS
PIPE • PLUMBING
AND HEATING

CRANE

FOR EVERY PIPING SYSTEM

TONS of Johnson UNIVERSAL BRONZE BARS

It is no longer necessary to put up with delay in securing bronze bars. Simply call your local Johnson Bronze Distributor. Tell him the *finished bearing size*. He will fill your needs at once . . . from stock!

Be sure to specify Johnson UNIVERSAL Bronze. There is no higher quality available. Every bar is completely machined . . . I D . . . O D . . . ENDS. This saves your time, eliminates all danger of hidden defects. Each bar is entirely usable from end-to-end.

Why not check your needs now? From our list of over 350 stock sizes you can buy exactly according to your requirements.

Catalogue

76 pages filled with bronze bearing information, fully illustrated. Write for your free copy.

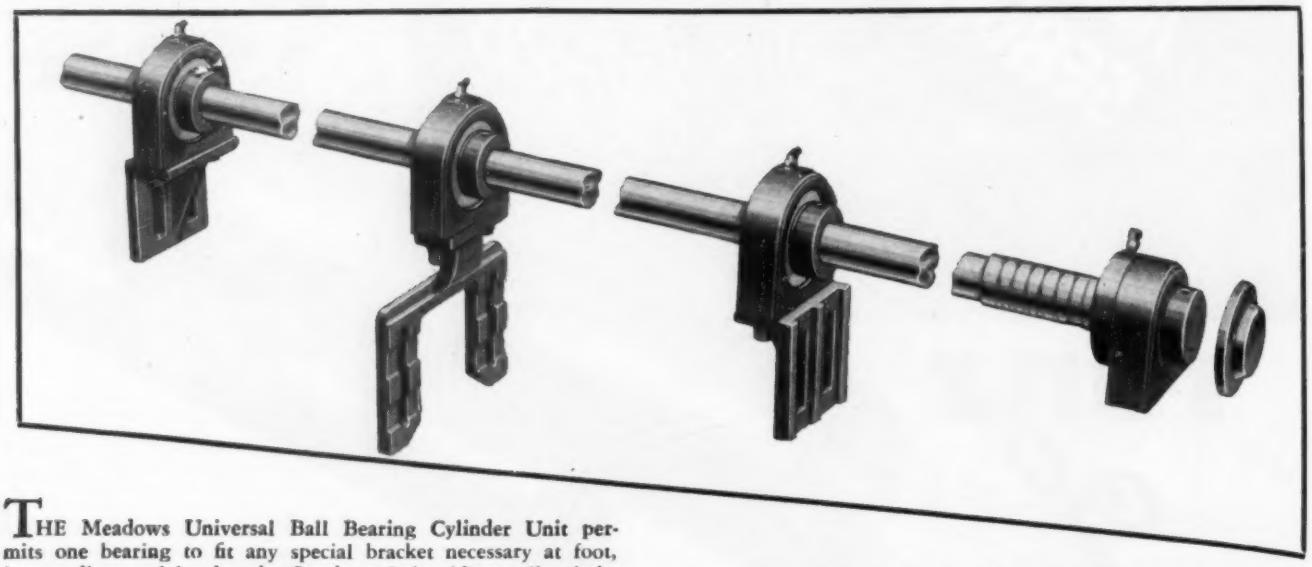
JOHNSON BRONZE

SLEEVE BEARING HEADQUARTERS

The MOST COMPLETE SLEEVE BEARING SERVICE in the WORLD

530 S. MILL STREET NEW CASTLE, PA.

MEADOWS HEAVY DUTY *Universal* BALL-BEARING CYLINDER UNITS



THE Meadows Universal Ball Bearing Cylinder Unit permits one bearing to fit any special bracket necessary at foot, intermediate and head ends. Quadrant hubs, idler pulley hubs and outboard caps can be used as needed.

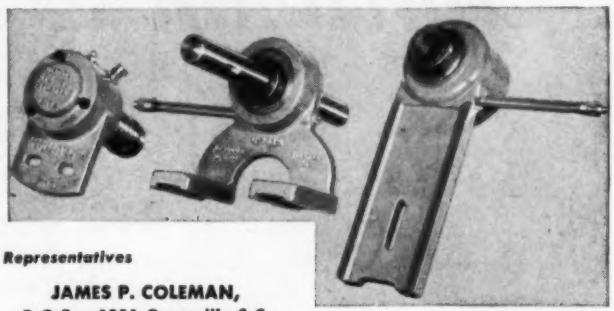
We particularly recommend these Universal Bearings when new oversize journals are installed. At this time all bearings can be standardized to one size for long, trouble-free operation and stock-room simplicity.

- **Fafnir Heavy-duty, self-aligning ball bearings.**
- **Double metal shields on both sides.**
- **Completely interchangeable in various shaft sizes on supporting brackets.**
- **Requires lubrication only once every 5000 hours, or roughly twice a year.**
- **No felt seals for troublesome installations and high initial friction drag.**
- **Brackets for bearings furnished to your requirements.**

We have ample stocks of these bearings and most housings for prompt shipment. *Repair and maintenance item.*

We also have in stock ample supplies of SAE 1035 ground and polished +.000 - .001 shafting for journals. We strongly recommend installing these high strength, precision journals when applying ball bearings.

Also standard Fafnir design Ball Bearing Cylinder Units to replace plain bearing units in Whitin, Saco-Lowell, Saco-Pettee, H & B, Lowell & Mason, and Hall-Stell or Prince Smith frames.



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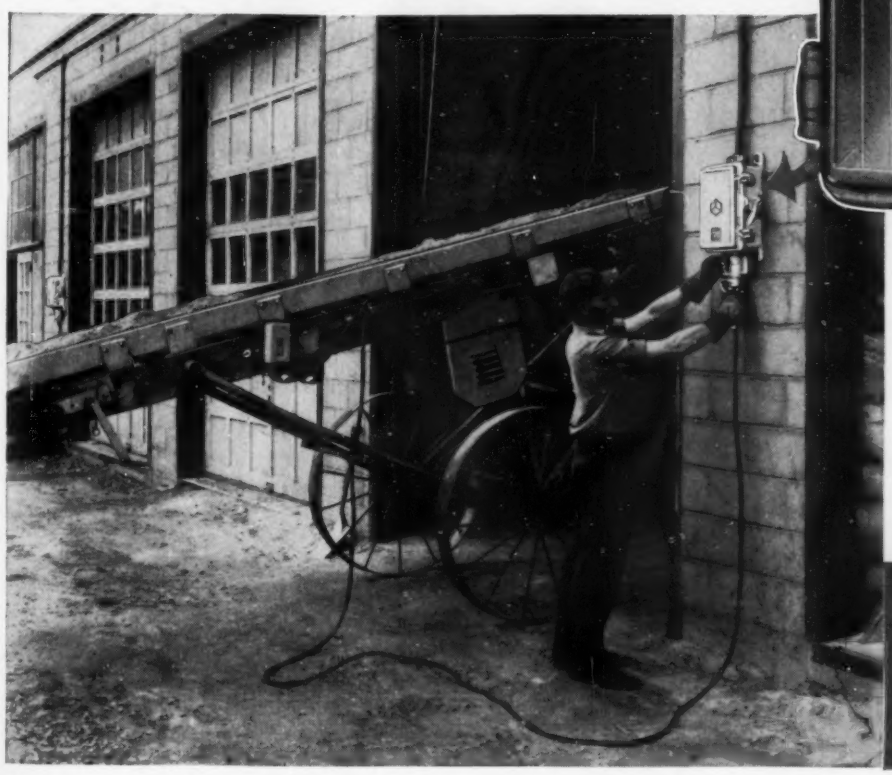
MEADOWS MANUFACTURING CO. · ATLANTA, GA.

. . . . Ball-Bearing Specialists to the Textile Industry . . . .

Type WMKS **Interlocking** Safety Switch and Plug Receptacle

CONDULET*

for the control of all kinds of **portable electrical equipment** in both indoor and outdoor locations



Type WMKS Interlocking Safety Switch and Receptacle Condulet with Type DP Interlocking Plug

It's heavy duty!
It's raintight!

Safety. Positive interlock prevents opening the case or withdrawing the plug unless the switch is "off". Switch can't be turned "on" unless the case is closed and the plug fully inserted.

Switches. Motor circuit switch. Quick make and break. Double break, reinforced, positive pressure-type blade and jaw construction. Positive pressure fuse clips. Combination solder or solderless wire lugs. 2 or 3-pole fusible.

Plug Receptacles. Style 1 is grounded through the shell of the plug and the receptacle housing. It will take the plugs used with the former Type MKS of the same rating. Style 2 is grounded through an extra pole and the shell. An eyebolt and wingnut prevents accidental withdrawal of the plug when the switch is open.

Cast metal case. Strong and durable. Four sturdy mounting feet. Many possible threaded hub arrangements for both vertical and horizontal conduit. Cover may be padlocked to prevent unauthorized entry. Operating handle may be padlocked "on" or "off".

Threaded operating shaft. Bearings permanently lubricated to resist corrosion and prevent the entrance of dust and moisture.

Horse-power ratings. 2 through 50 H. P. 30, 60, 100 or 200-ampere., 230 or 575-volt A. C.

Listed in Condulet Catalog 2500, Section 50.

*CONDULET is a coined word registered in the U. S. Patent Office. It designates a product made only by the Crouse-Hinds Company.

Our 50th Anniversary
1897 — 1947

A Nationwide Distribution Through Electrical Wholesalers

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FLOODLIGHTS
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CROUSE-HINDS COMPANY
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For enhanced lustre—

—use

LUMERCINE

In all fabric, warp and skein mercerizing

LUMERCINE causes instantaneous wetting out, even penetration of the caustic when used in concentrated caustic solutions. The result is a smooth round surface and an enhanced lustre. Lumercine quickly penetrates tightly woven and heavy weight fabrics, leaving the fibres open and swelled for uniform dyeing and level shades. Because it dissolves immediately and completely in mercerizing baths, Lumercine makes no scum, does not cause sludge in caustic recovery systems.

Lumercine may also be used in alkaline detergent baths, auxiliary scour and penetrant for cotton in pressure or open kier boils. It helps to remove Pectins. When used on knitted goods previous to bleaching, it is effective in removing graphite and lubricants. For rayon, it acts as a scouring assist when used with caustic alkalis in a box or a jig. Samples of Lumercine and further information supplied on request.

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.

Chemicals PASSAIC, N. J.

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TROUBLED WITH EXCESSIVE BREAKAGE? TOO MANY REWINDS?

Investigate the Kidde Tension Control

Now equipped with new LOW-FRICTION Roller Bail

If you're running into winding trouble, here's an easy way to put a stop to it. Just equip your Universal 50's with the newly improved *Kidde* Tension Control!

Already field-tested and proved as an unfailing way of maintaining uniform winding tension—at any predetermined value down to virtually zero grams—the *Kidde* Tension Control now offers an outstanding new advantage: the *Low-Friction* Roller Bail.

Running on super-precision ball bearings —as accurate as those used on the finest machine tool spindles—this new Roller Bail assures the lowest running friction . . . the highest standards of performance.

Its low-friction characteristics result in less tension build-up on the package . . . less smear and cobwebs.

Put the *Kidde* Tension Control to work—and forget your winding troubles!

Kidde

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc.

MAIL COUPON FOR DETAILS

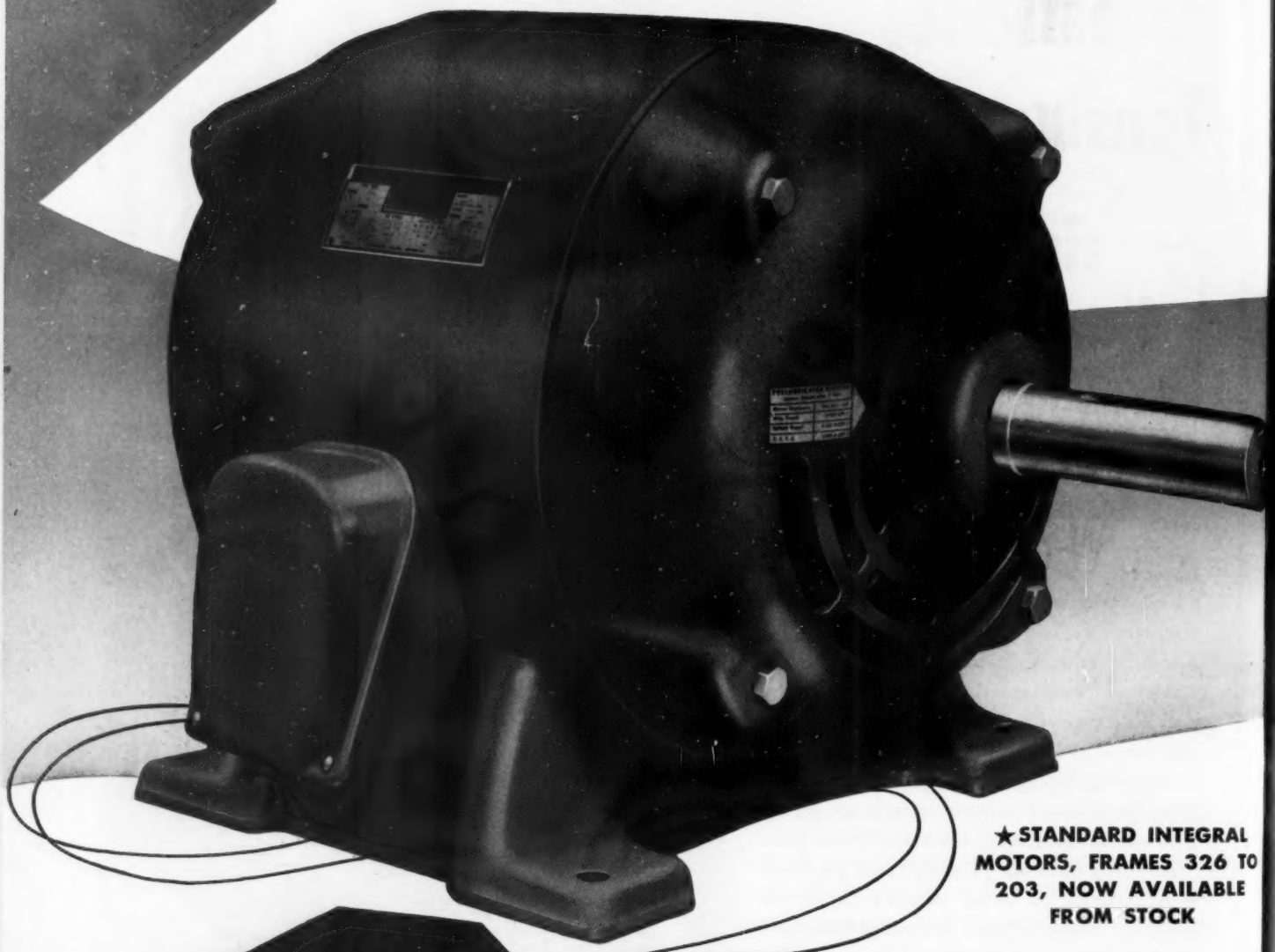
Walter Kidde & Company, Inc.
990 Main Street, Belleville 9, N. J.

Gentlemen:
Please send me full information on the *Kidde* Tension Control with Low-Friction Roller Bail.

NAME.....
POSITION.....
COMPANY.....
STREET ADDRESS.....
CITY.....ZONE #....STATE.....

Walter Kidde & Company, Inc. • 990 Main Street • Belleville 9, N. J.

The most important advance in motor design in 58 YEARS...



★STANDARD INTEGRAL MOTORS, FRAMES 326 TO 203, NOW AVAILABLE FROM STOCK

Features and improvements demanded most by users ALL WRAPPED IN A SINGLE PACKAGE

When Westinghouse engineers began designing a postwar motor they abandoned the concept that all motors must be cousins. Instead, they asked electric motor users *what they wanted* in motors . . . features they couldn't buy in any one motor.

These features demanded most by motor users are *all* incorporated in the new Life-Line Motors:

ALL-STEEL PROTECTION. All frames, feet and brackets are HEAVY STEEL. Life-Line Motor stators are far stronger—a new core locking device eliminates rivets.

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

... the New WESTINGHOUSE Life-Line MOTOR

It's completely new . . . it's completely different . . . it wraps up the advances made in "custom-built" wartime motors in a single package!

For 58 years, induction motors have been built fundamentally alike. Differences have been minor . . . improvements gradual. Today, in the new Life-Line, Westinghouse presents a major departure from accepted ideas of standard-motor limitations.

Life-Line, today, offers industry a truly all-steel protected motor. All exposed surfaces are HEAVY STEEL—frames of even the smallest sizes are 3/8" thick.

More compact power is packed in Life-Line. For example, on the 284 frame, size has been reduced 35%, although NEMA mounting dimensions have been maintained . . . starting torques are as much as 134% greater per pound of motor . . . maximum torques as much as 116% more per pound.

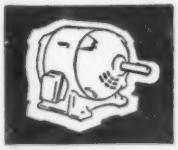
Electrical characteristics have been improved . . . new materials and new winding techniques give increased protection against electrical failure. And sealed, pre-lubricated bearings do away with need for greasing or attention for at least five years!

The Life-Line Motor, as a result, represents the biggest single step forward in design and construction since the invention of the electric motor 58 years ago. Life-Line Motors are now reaching the drives of industry by the thousands, but are not yet available in quantities to meet the unprecedented demand. So, look over Life-Line advantages now with an eye to your future requirements. Your local Westinghouse office can give you full details, or write to Westinghouse Electric Corporation, P. O. Box 2025, Buffalo 5, N. Y.

★ ★ ★

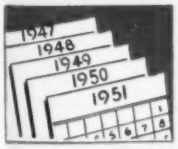
Life-Line Motors are now in production at the new Westinghouse Motor Works in Buffalo, N. Y. This plant is laid out, tooled and equipped to fully utilize newly developed production processes and techniques on a scale hitherto unequalled in the manufacture of electrical motors.

J-21406

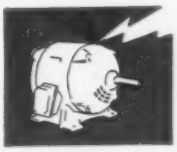


LESS SPACE PER HP. Life-Line Motors occupy less space per horsepower than any other standard motor . . . making it easier to build into machines and install in cramped quarters.

MORE TORQUE PER LB. Life-Line Motors give as much as 134% higher starting torque per pound of motor . . . up to 116% higher maximum torque.



NO LUBRICATION FOR 5 YEARS. Life-Line Motors need no greasing for AT LEAST FIVE YEARS. Bearings are pre-lubricated . . . sealed against dirt and moisture.



IMPROVED WINDINGS. New insulating materials . . . new coil winding techniques . . . new stator slot designs . . . give the Life-Line new record-setting protection against electrical failures.

NEW QUIET SMOOTHNESS. Life-Line Motors cut vibration and noise to new low limits for standard motors . . . satisfy many "special motor" requirements.

NEW SLEEK LINES. The Life-Line has sleek lines . . . a smooth finish . . . discourages dust and dirt accumulations . . . harmonizes with modern machine and tool design.

Life-Line motors

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

FACTORS

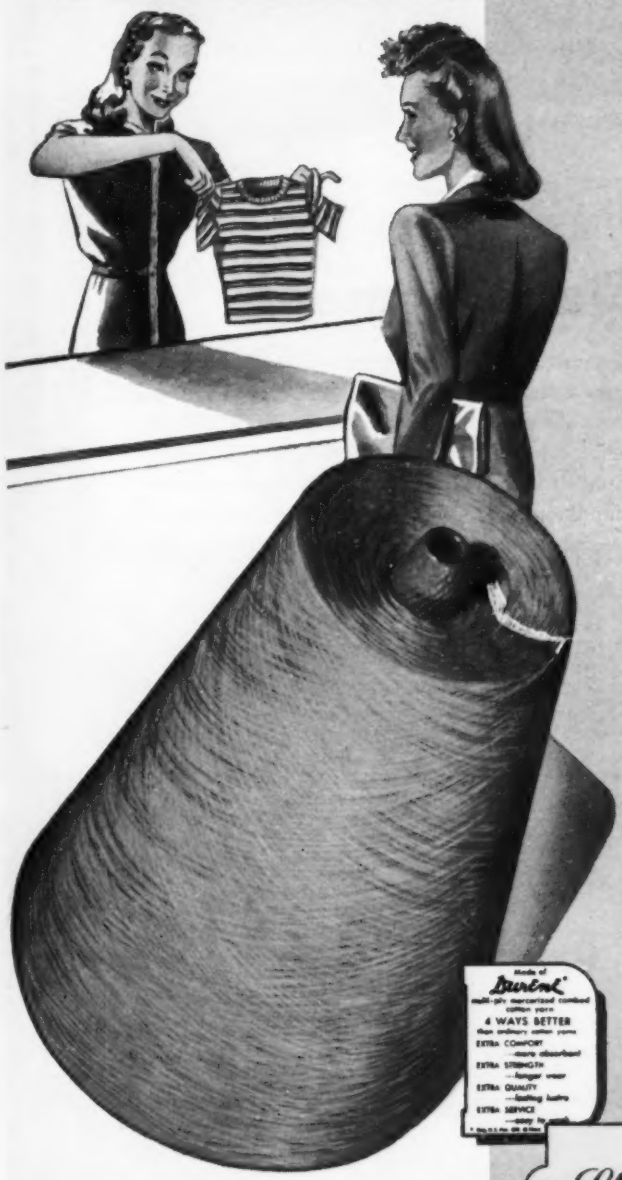
For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

STANDARD *Durene* gives you greater production of quality knitwear—with more comfort, beauty and wear



Your knitting machines will turn out more quality knit goods per hour when you run Standard Durene. This superior combed mercerized yarn is made so uniform, supple, smooth and elastic it purrs through your needles. It produces more lustrous, soft, smooth-textured fabrics . . . the kind that keeps your customers sold. You run no quality risk with Standard Durene. Its careful processing is all done in our own plant. Standard Durene is rigidly controlled by us from the purchase of selected quality raw cotton to the finished yarn package.

Standard Durene measures up not only to high Durene quality but to our own high standards evolved from our more than seventy years' experience and our constant research. Nationally known manufacturers always choose Standard Durene to safeguard their quality reputation . . . Keep your quality customers satisfied . . . specify Standard Durene.

Standard Durene · Selo · Mercerized Combed Saks · Threads

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Standard-Coosa-Thatcher Co.

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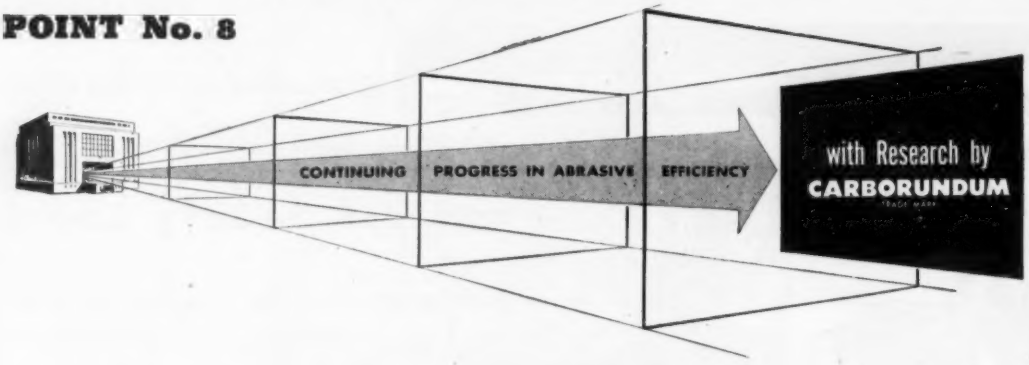
A BUYING GUIDE FOR ABRASIVES

POINT No. 8



Research and Development

The Carborundum Company is considered a good source of supply for abrasive products because of its outstanding research accomplishments. Research at The Carborundum Company is aimed at developing uniform abrasive products that cut faster...cut cooler...grind more pieces per wheel...improve the finish and, in other ways, improve grinding efficiency.

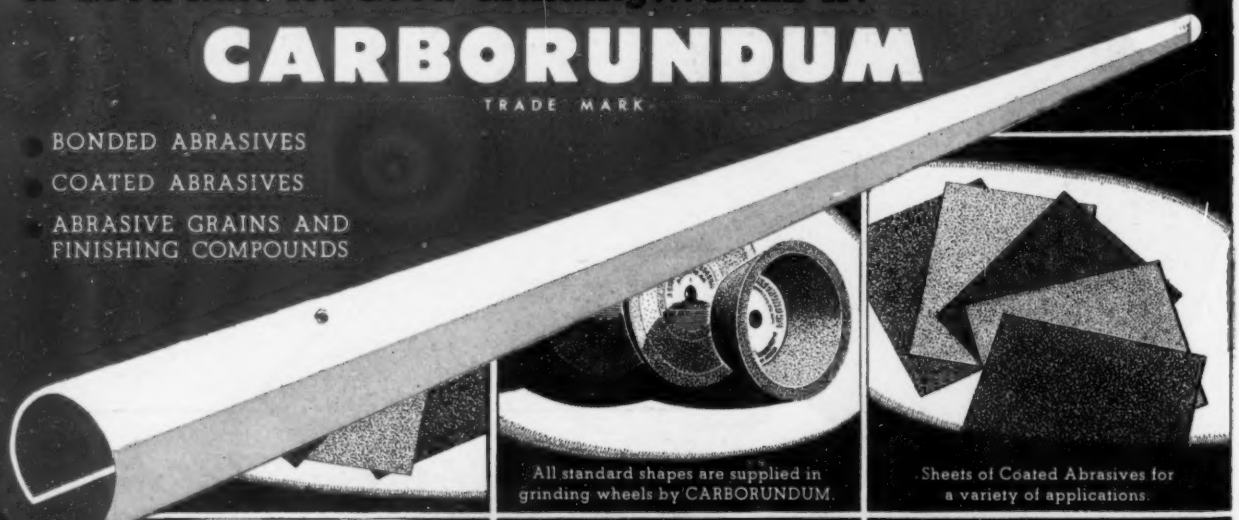
Because abrasive research is part of the very foundation of The Carborundum Company, users can rely on abrasives by CARBORUNDUM as being in the forefront of technical improvement. It is this assurance which leads so many manufacturers, noted for production efficiency, to prefer abrasives by CARBORUNDUM. The Carborundum Company, Niagara Falls, N. Y.

A Good Rule for Good Grinding...CALL IN

CARBORUNDUM

TRADE MARK

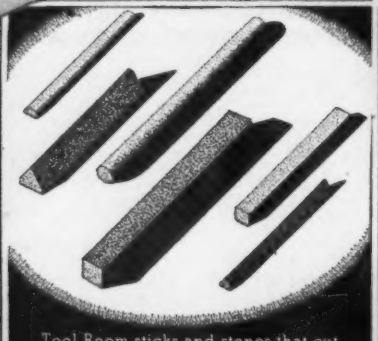
- BONDED ABRASIVES
- COATED ABRASIVES
- ABRASIVE GRAINS AND FINISHING COMPOUNDS



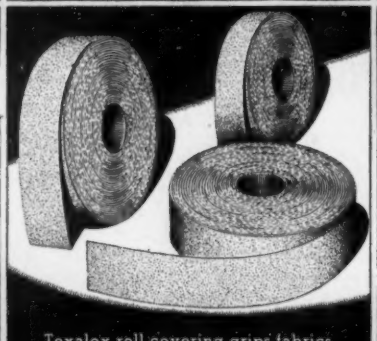
All standard shapes are supplied in grinding wheels by CARBORUNDUM.

Sheets of Coated Abrasives for a variety of applications.

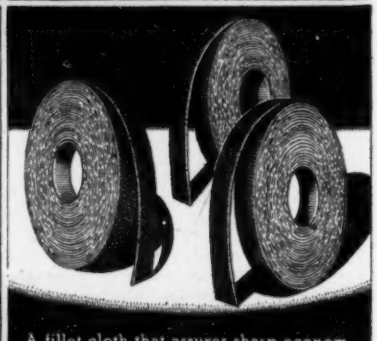
"Carborundum" is a registered trademark which indicates manufacture by The Carborundum Company.



Tool Room sticks and stones that cut fast...last long...and hold their form.

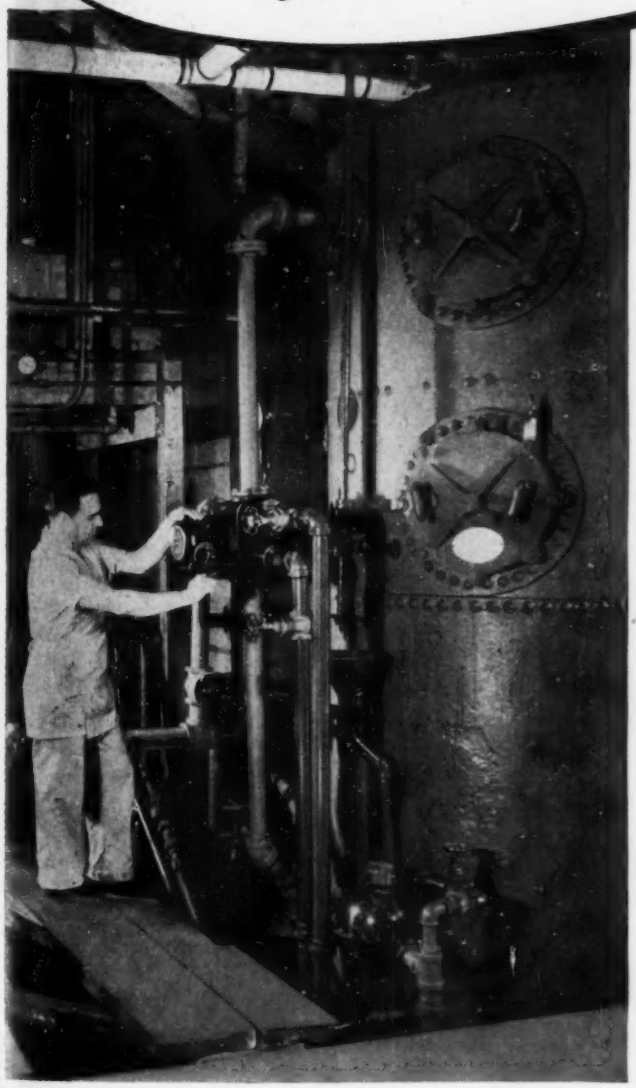


Texalox roll covering grips fabrics firmly, surely but gently.



A fillet cloth that assures sharp economical grinding of card clothing

Permutit Water Conditioning IN SERVICE 32 YEARS AT Van Raalte CO., INC.



"Excellent service for 32 years...water softeners in very good condition,"

***says* H. SEARLES, DIRECTOR OF RESEARCH**

The Van Raalte Company of Saratoga Springs, N. Y., manufacturer of women's rayon acetate, viscose and nylon underwear garments, use Permutit* softened water in their fabric dyeing process. For the past 32 years there, Permutit's Zeolite Water Softeners have been reducing 80-105 p.p.m. water to zero hardness. "Back in 1914," states Mr. Searles, "two zeolite water softeners were installed. Today these softeners are carrying approximately 140,000 gals. per day and are still in excellent condition!" A factual tribute to Permutit's durability!

Impurities in ordinary water can easily disturb chemical reactions, spoil the finish of fabrics, cause spotty, off-color dye-lots. Permutit removes these impurities, making for surer, purer dyeing required in quality fabrics. Today more and more mills throughout the world are using Permutit Water Softening Equipment to protect the quality of their process water!

Write now to The Permutit Company, Dept. TI-9, 330 West 42nd St., New York 18, N. Y., or Permutit Company of Canada, Ltd., Montreal.

*Trademark Reg. U. S. Pat. Off.

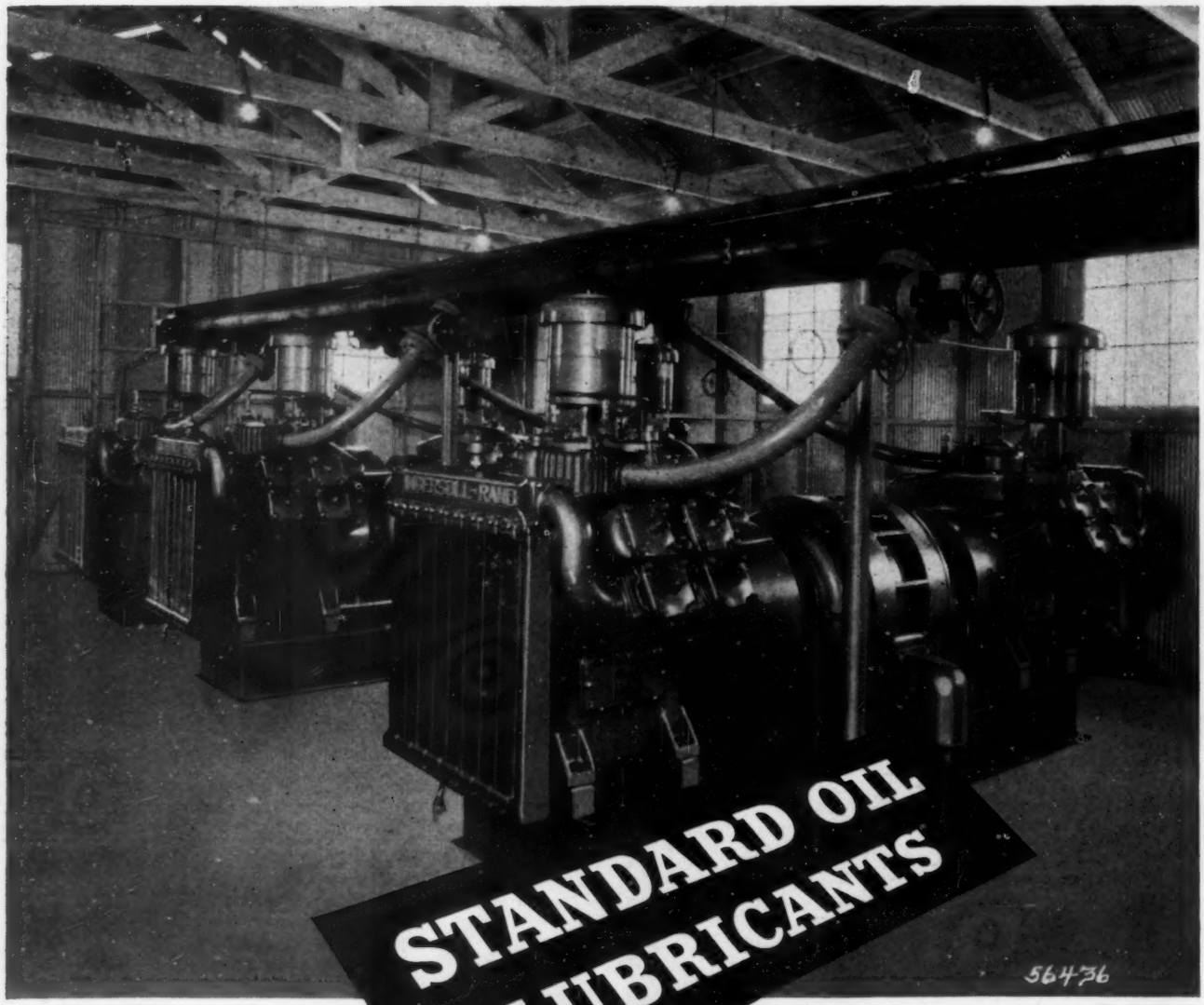
FOR 34 YEARS

Permutit

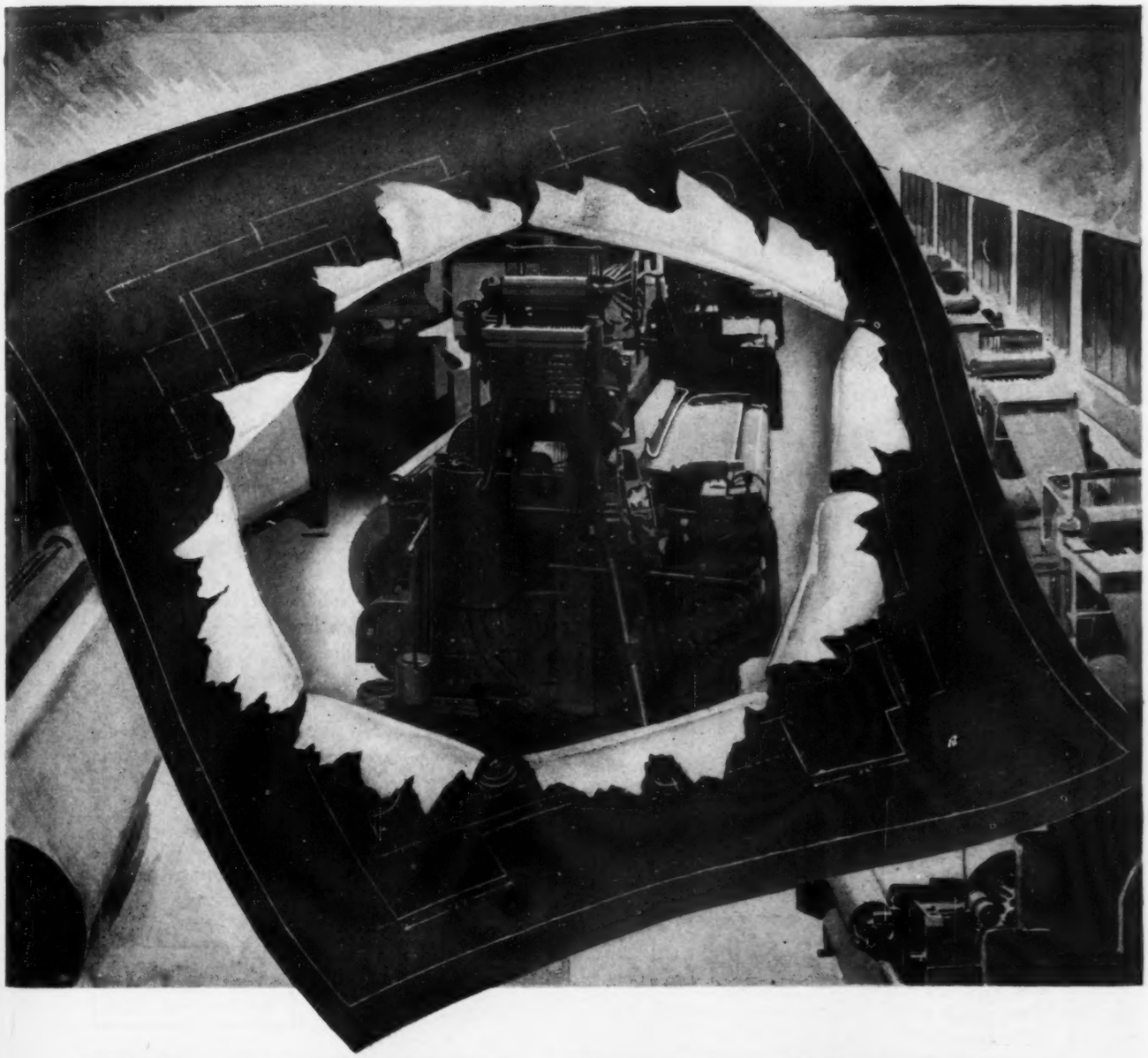
WATER CONDITIONING HEADQUARTERS

up and down

Keeping compressed air production up and costs down is largely a matter of lubrication. Many factory executives have found that Standard Oil Compressor Oils help keep their compressors on the job *longer* with less time out for repairs and replacements. These dependable oils form strong films to reduce wear, and to seal against blow-by in the face of rising temperatures. They adhere closely to working parts, and their high chemical stability minimizes valve-clogging deposits . . . . Why not have a Standard Oil Lubrication Engineer consult with you on your compressor oil problems? Remember—the experience and combined facilities for research and testing behind Standard Oil Lubricants are *unequalled.*



STANDARD OIL COMPANY INCORPORATED IN KENTUCKY



Without Waiting For Our Blue-Print of Tomorrow... the Whitman Organization Is Here Today!

Streamlined production methods... mechanical equipment that keeps pace with technological advancement... stringent quality-control ... these are the things that account for the leadership of Whitman Textiles... in quality, in modernity, in dollar value.

WILLIAM *Whitman* COMPANY, INC.

GENERAL OFFICES: 261 FIFTH AVENUE, NEW YORK 16, N. Y.

Cotton & Rayon Fabrics Division, 40 Worth St., New York, N. Y.

BOSTON: 75 Chauncy Street • CHARLOTTE: Commercial Bank Building • PHILADELPHIA: 1600 Arch Street
CHICAGO: 222 West Adams Street • LOS ANGELES: 111 West Seventh Street

THESE UNBRAKO Self-Lockers can be used OVER AND OVER AGAIN

Reg. U. S. Pat. Off.

PAT'D AND PATS. PEND.

Their knurled cup points make them Self-Lockers because the points dig in and stay tight—even when subjected to the most chattering vibration. Yet, this "Unbrako" Screw can be backed out with a wrench and used OVER and OVER AGAIN. That's why millions and millions of these dependable "Unbrako" Socket Set Screws with the Knurled Cup Points are used in industry. Write for the "Unbrako" Catalog . . . it contains complete information about these and other "Unbrako" Screw Products.

These "Unbrako" Screw Products are available in sizes ranging from #4 to 1½" in diameter and in a full range of lengths.

"Unbrako" and "Hallowell" Products are sold entirely through Industrial Distributors.

Knurling of Socket Screws originated with "Unbrako" in 1934.

KITS PATS. PEND.

You can't screw socket screws in or out without a hex socket wrench, so why not get our No. 25 or No. 50 "Hallowell" Hollow Handle Key Kit which contains most all hex bits.

KITS PATENTS PENDING

"Unbrako" Socket Head Cap Screws with the knurled head save assembly time because the knurling provides a slip- and fumble-proof grip—though the fingers and head be ever so oily, therefore, they can be screwed in faster and farther before it becomes necessary to use a wrench.

OVER 44 YEARS IN BUSINESS

PAT'D AND PATS. PEND.

The knurled threads of this "Unbrako" Socket Set Screw makes it a Self-Locker, too for Flat, Oval, Cone, ½ and full dog points.

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 582 • BRANCHES: BOSTON • CHICAGO • DETROIT • INDIANAPOLIS • ST. LOUIS • SAN FRANCISCO

A dye beck in the year 1820 — Courtesy J. B. Lippincott Co.

The dyer of 1820 was limited to the use of *natural* dyestuffs.

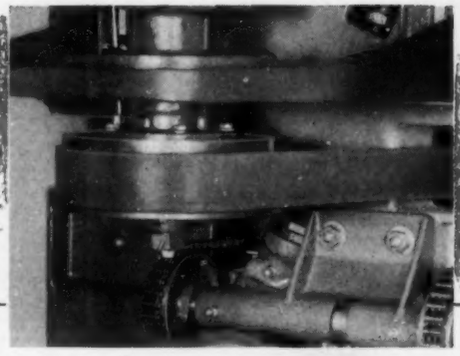
The first practical, *synthetic* dyestuff appears to have been prepared in 1856. This was followed by an era of significant progress in the textile industry.

In utilizing *modern* dyestuffs, today's dyers are aided by Rapidase. This product of Wallerstein Research assures rapid and consistently effective de-sizing of cottons, rayons and mixed goods over a wide range of temperatures.

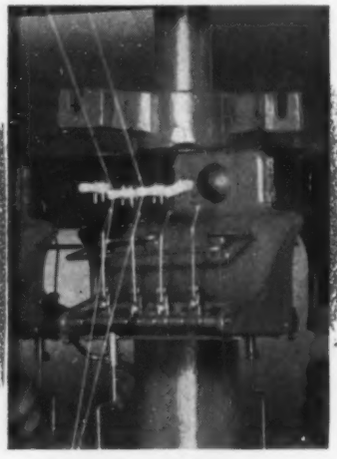
RAPIDASE

WALLERSTEIN COMPANY, INC. **180 Madison Ave., New York 16, N. Y.**

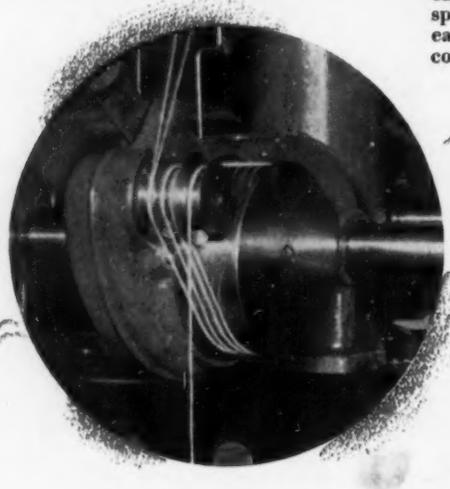
One is the magic number for ring-twisting of spun yarns



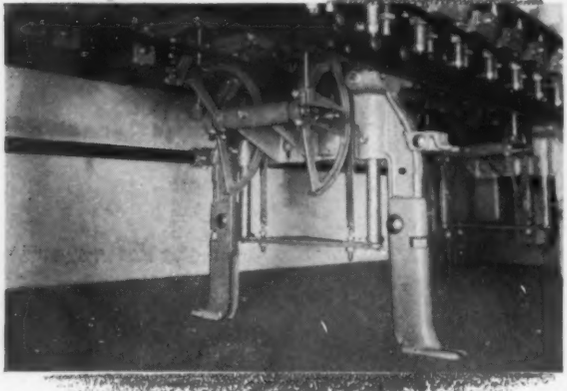
Atwood Ring Twister has SINGLE endless, lapless drive belt for 100 spindles. Delivers equal power to each spindle. Spindle speed is constant, twist accurate.



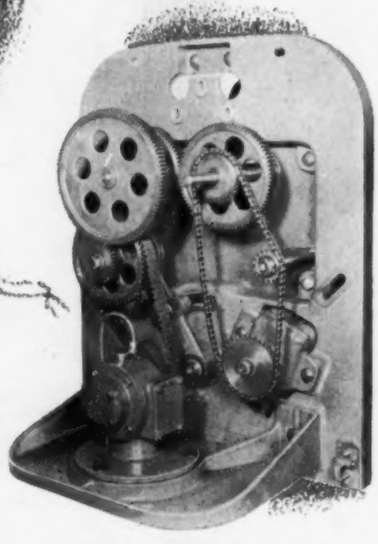
Automatic stop motion permits tying knots in SINGLE ends — eliminates roller laps and short plies. Only ONE spindle stops — others go on producing. Operator can work in cycle.



ONE feed roll for each spindle permits use of individual stop motions and makes it easy to thread up with a free movement of the hand.



Lifter rod unit traverses ring rail and thread board through bearings which are INTEGRAL part of middle stand.



ONE gear is all you have to change in order to change the twist on Atwood Ring Twister. Reversing twist is just as easy.

It's because of such outstanding features that the Atwood No. 10 Ring Twister is considered the No. 1 method of doubling and twisting in ONE operation.

ATWOOD DIVISION

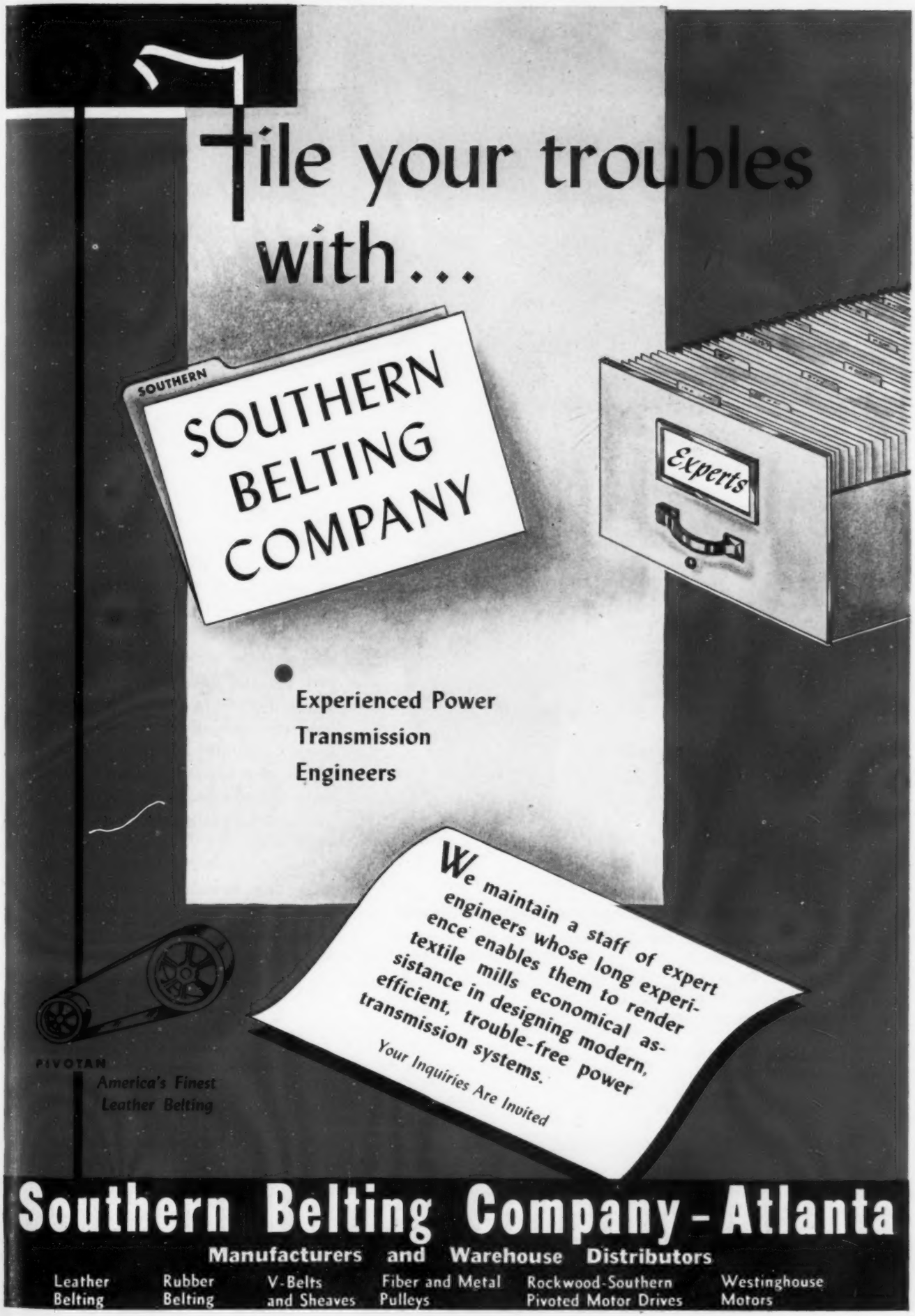
STONINGTON, CONN.

Universal Winding Company

ATWOOD

Reg. U.S. Pat. Off.

Providence • Boston • Philadelphia • Utica • Charlotte • Atlanta • Chicago • Los Angeles • Montreal • Hamilton


File your troubles with...
SOUTHERN
SOUTHERN BELTING COMPANY
Experts
Experienced Power Transmission Engineers
We maintain a staff of expert engineers whose long experience enables them to render textile mills economical assistance in designing modern, efficient, trouble-free power transmission systems.
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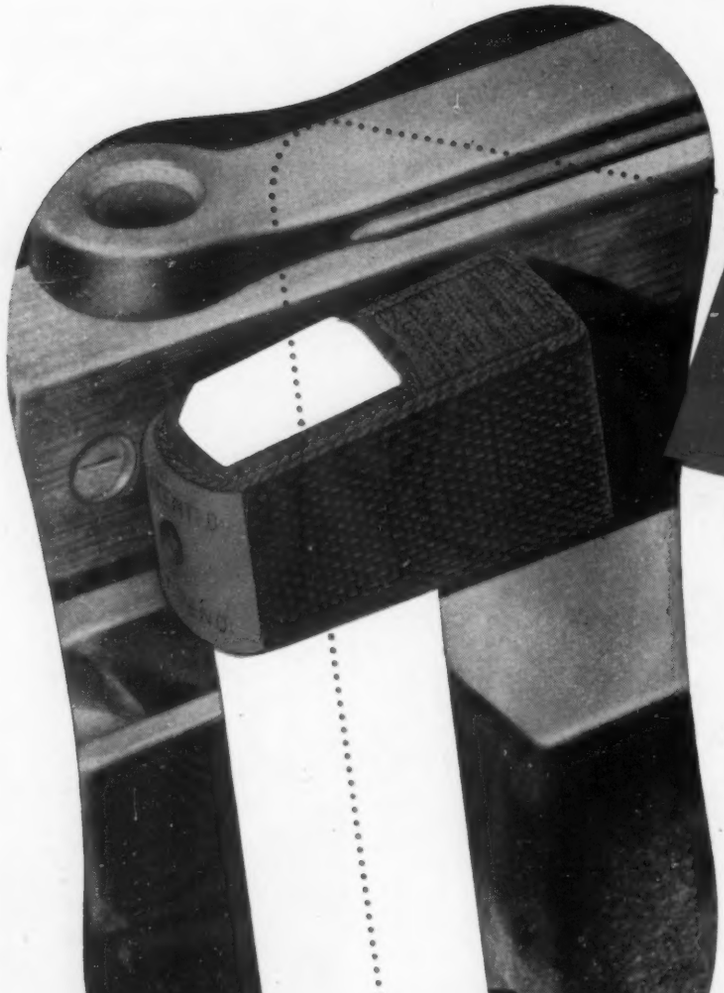
Rockwood-Southern Pivoted Motor Drives
Westinghouse Motors



No equal for
"staying put"
on the picker stick

Dayton De Luxe Loop Pickers are virtually "built around a hole" designed to meet all characteristics of the picker stick. Practical design includes a slightly flared bottom so that when the picker is started onto the stick the taper prevents tearing of the loop ply and facilitates centering. When the Dayton picker is driven onto the stick, there is nothing to break . . . nothing to expand. Dayton design, plus specially-patented symmetrical loop construction, anchors it into position and *holds it in place indefinitely.*

Too, the specially-designed picker stick hole includes "forward tilt". Another Dayton feature which insures *correct shuttle contact.* For the complete story write:

TEXTILE PRODUCTS DIVISION
DAYTON RUBBER
Main Sales Office: Woodside Building, Greenville, S. C.
Factory: Waynesville, N. C.

ADDITIONAL REASONS WHY YOU SHOULD SPECIFY DAYTON LOOP PICKERS

- Loom can be boxed the same at all times.
- Keep their shape.
- Easy to install—fit the stick.
- Made of especially woven fabric.
- Roughness reduced to absolute minimum.
- Jerked-in fillings are reduced to a minimum.
- Cuts picker costs as much as 50%.
- Only picker built to stand pounding of high-speed loom.
- "Stay put" on stick.
- All pickers uniform in size.

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

We Take a Bow

Reader response has been excellent on TI's report of the National Textile Seminar. This report was the *only* report reprinted at the request of the Seminar committee. In the Seminar verbatim report, published in 1946, the foreword gives credit by saying of the report and TI's service, "an indefatigable source of inspiration. . . . and a superb write-up . . . gave morale a lift all along the line." We on TI are gratified that the Seminar has been so well pleased with our service.

◆

Liked "Keep Mills Clean"

"For our own information we wonder if you could tell us who 'Don Numan' is who wrote the article titled 'Keep Mills Clean' which appeared in your June issue. This article was of considerable interest to us as it made some comments on methods of cleaning textile mill floors."

GEORGE D. BILLINGS
Advertising Manager
G. H. Tennant Co.
Minneapolis, Minn.

◆

1000 Reprints Made

"Could you arrange to furnish us with 1000 reprints of the Craft-Schwem article, 'Labor and Management Benefit by Industrial Engineering Principles.'"

NAME WITHHELD

◆

Bear Closes Mill

There are more ways to shut down a cotton mill than by cutting off the power or having a strike. At least that is what Charlie Cobb of the Canton (Ga.) Cotton Mills believes, especially if the mill is located near the back woods.

Not long ago Charlie walked through the mill and noticed that very few people were running their jobs. They were either out on the street or hanging out of the windows. Upon investigation he found that all of the excitement was caused by a big bear which had been killed by one of the local boys and brought into the mill village, draped over the hood of an automobile.

◆

Waste Reduction

"We read with much interest your article in the June issue of TEXTILE INDUSTRIES entitled 'Waste Control and Reduction' by Mr. B. H. Crawford.

"We would like to have your permission to make a copy of this article to send to all of our mills. Doubtless, all of our mill heads have seen the article in TEXTILE INDUSTRIES. However, we feel that the subject of waste reduction is so important and this article carries such an excellent message that we would like to emphasize its importance by sending them additional copies."

C. J. JOHNSON
Industrial Engineering Dept.
Deering Milliken
Greenville, S. C.

◆

Vacation Thoughts

With most vacations out of the way, it's a good time to take stock on the results, sort of like New Year resolutions.

Judging from many newspaper accounts during the past several weeks, some folks hurried too much and didn't practice good driving rules, and they are lucky to be alive today . . . and a new car prospect.

Some folks took such long trips that they needed a second vacation to rest up.

Like building a house, most vacations cost more than was planned . . . travel costs haven't budged an inch on the downward side.

SHORTS and REMNANTS

By M. L. D.

Lucky was the fellow who stayed home, twiddled his toes, and took life easy.

A change—any change—from day after day work habits is a tonic for everyone. The person who does not take a vacation is cheating himself as well as his company.

Most vacations are a joy to look back on, and an anticipation to look forward to—double-barreled goodness.

◆

Textile Chemistry Goes to School

"We are producing a series of proprietary slide-films on chemistry which will have national distribution to schools. In this connection we are interested in obtaining a picture showing bleaching of cotton cloth with chlorine or bleaching powder."

THE JIM HANDY ORGANIZATION
Detroit, Mich.

(The late war accelerated the acceptance and use of instruction and education by slides and films. Its use by industry should grow by leaps and bounds for training programs, improved labor relations, and other uses.)

◆

G. I. Training Program

"Please send us 24 copies of 'Straightening Needles for Full-Fashioned Machines' by B. D. Gaddy, supt., Knitting Dept., Golden Belt Mfg. Co., from your October, 1930, issue; also 24 copies 'How to Straighten Full-Fashioned Needles' from your September, 1946, issue.

"We are in need of them to be used in our G. I. training program in our full-fashioned plant."

W. B. ROBINSON
Ass't. Treas.,
Elizabeth City Cotton Mills,
Elizabeth City, N. C.

(The textile publications of the country should be a constant source of valuable information for training programs.)

◆

Dan River Maintenance

"Will you please send me a reprint of the 'Preventive Maintenance Program at Dan River Mills'?"

J. R. WIKLE
The Railway Supply Mfg. Co.,
Charlotte, N. C.

(There are still some reprints available on this popular story.)

◆

Tricot Knitting

"As a subscriber to TEXTILE INDUSTRIES for a good many years I would like to obtain some information regarding a Tricot knitting machine. . . . Any information you can give me pertaining to this will be greatly appreciated."

F. A. HANUSEK
Charlotte, N. C.

(Mr. Thomas Johnson, Amercan Viscose Corp., 350 Fifth Ave., New York 1, N. Y., has prepared a book on Tricot knitting, and he is an authority on the subject.)

A Welcome Pat

"As you know, two of the scheduled six issue ads have been run and we wish to advise you of the excellent results which we have gotten from these advertisements.

"We have received numerous inquiries, somewhere between 25 to 50, and the interesting part is the large percentage of orders which we have received as result of these inquiries. We have actually received a number of orders as a result of the ads, several of which came from the New England states where we had never solicited the mills and the orders received are wholly and directly due to TEXTILE INDUSTRIES advertisements."

ERNEST F. CULBREATH
Numo Machine and Engineering Co.
Charlotte, N. C.

◆

Draper Loom Fixing

Every since Ben Crawford started his series on "Draper Loom Fixing" we have had a host of requests for the complete book which we announced would be made up when the series was completed. . . . Orders for one, five, a score, and more . . . hundreds of copies.

Book (164 pages) containing all of Mr. Crawford's articles is given in conjunction with subscription to TEXTILE INDUSTRIES.

◆

We Have Such Requests Often

"Our client, The General Chemical Company, is preparing a new edition of the General Chemical Product Book.

"For use in this book we should like to borrow 10 or 12 outstanding photographs illustrating the important manufacturing or processing steps in the field which your publication serves."

ATHERTON & CURRIER, INC.
Advertising Agency
New York City.

◆

That's What We Tell 'Em

"I was looking for the address of the West Point Foundry and Machine Co., being interested in some machinery they are building, and I looked it up in your magazine. So it pays to advertise in TEXTILE INDUSTRIES."

J. C. GODFREY
Vice President & Supt.,
Calhoun Mills,
Calhoun Falls, S. C.

◆

Service on Finishing

"We would appreciate it very much if you can put us in touch with the author of this article: "Replacing Starch In Finishing," Jan., 1947, or inform us as to the manufacturer and availability of the new types of product which are stated to be water soluble styrene and alkyd resin compounds.

C. C. KESSLER
Penick & Ford, Ltd.
Cedar Rapids, Ia.

◆

Yarn Friction Tester

"The writer read with much interest the article on 'Cotton Warp Sizing' contained in your January issue. . . . We are particularly interested in the yarn friction tester. . . ."

S. PINCUS
Sec.-Treas., Fremont Thread & Yarn Co.,
New York, N. Y.

(Photo of yarn tester came from Nopco Chemical Co., Harrison, N. J.)

"In my business, we could use more caustic soda, soda ash and sodium bicarbonate than we're getting . . . and that goes for liquid chlorine, too. But at least we know where we stand. Mathieson took the trouble to explain the whole story to us—why there's a shortage of these important heavy chemicals . . . what to expect in the way of increased supplies in 1947 and 1948. Mathieson always works with us . . .

. . . and that's why we like to do business with Mathieson!" *

**The foregoing is based on reactions to our advertisement—"Why you can't buy all the Caustic Soda, Soda Ash, Sodium Bicarbonate and Chlorine you want"—which appeared in many publications earlier this year.*
The Mathieson Alkali Works (Inc.),
60 East 42nd Street, New York 17, N. Y.

Mathieson
CHEMICALS

Caustic Soda . . . Soda Ash . . . Sodium Bicarbonate . . . Liquid Chlorine . . . Chlorine Dioxide . . . Ammonia, Anhydrous & Aqua . . . HTH Products . . . Fused Alkali Products . . . Dry Ice . . . Carbonic Gas Sodium Chlorite Products . . . Sodium Methylate

Textile Industries

SEPTEMBER
1947

History of Inflation Repeats

IT MAY have been a great comfort to several million young folks who have been brought up to depend on the government for practically everything to read a reassuring statement issued by the Bureau of Labor Statistics a few weeks ago indicating that everything is just fine, and that there is nothing now in sight to indicate the approach of a depression. Much of the rosy picture painted by this report of the Bureau of Labor Statistics was based on our high export business.

About the same time, the President reported that the federal government expected a record-breaking treasury surplus by the end of this year, and so apparently everything is considered just fine in government circles.

Those of us who can remember back as much as 20 years may notice a peculiar similarity between these reports and those that were being issued by the government in 1927 and '28, when we were being reminded that this country had discovered the secret of perpetual prosperity and that we would simply go on and on to dizzier heights of affluence. It will also be obvious to the older members of the business fraternity that the pattern of today's so-called prosperity is almost exactly the same as the pattern set in 1926 to '29.

Today, our government bureaus and numerous statistical organizations are pointing out how our wonderful export business is contributing to the general prosperity. It was this same export business, and the same kind of export business, that helped to create the phoney prosperity of 1927 and '28. Then, as now, we were "selling" billions of dollars' worth of real goods to people who were "paying" for these goods with our own money, obtained on loans which they had neither the intention nor the capacity to repay.

The situation today is, if anything, even worse than in the other post-war era. At that time our American investors who were gullible enough to lend money in bankrupt foreign countries at least had the excuse of ignorance, since most of these loans were backed up by handsomely printed bonds which certainly loked as good as anyone could wish, and many of our topflight financiers, who of course were making a neat profit on the floating of these foreign bonds, were assuring us that these "investments" were of the best.

Today, we are going through the same cycle of shipping billions of dollars' worth of our goods abroad, but this time we *know* that we are giving them away; yet we fatuously kid ourselves into thinking that we are making a profit in money on every shipload of real goods that vanishes from the American economy.

Realizing that we have to feed

The recipe for the "prosperity" that we enjoyed in 1925 to '29 consisted almost entirely of one ingredient—inflation. The present prosperity contains this same ingredient in an even greater proportion than the last boom which led to such disastrous consequences.

Westinghouse Fluorescent Lamps offer HIGH LIGHT OUTPUT to provide real SEE-ABILITY. Their low surface brightness minimizes direct glare. They provide excellent distribution of light, are cool burning, and duplicate most closely the color of OUTDOOR DAYLIGHT. To step-up production in your mill, plant or office, to reduce waste or spoilage, to help improve quality or product, to promote safety—it's to your advantage to provide good lighting—the kind synonymous with Westinghouse. Yes—for fluorescent lighting at its best, specify Westinghouse—the name you know in lamps!

Lamp Division, Westinghouse Electric Corp., Bloomfield, N. J.

Westinghouse lamps
FOR SEE-ABILITY

"Citadels" by Boardman Robinson

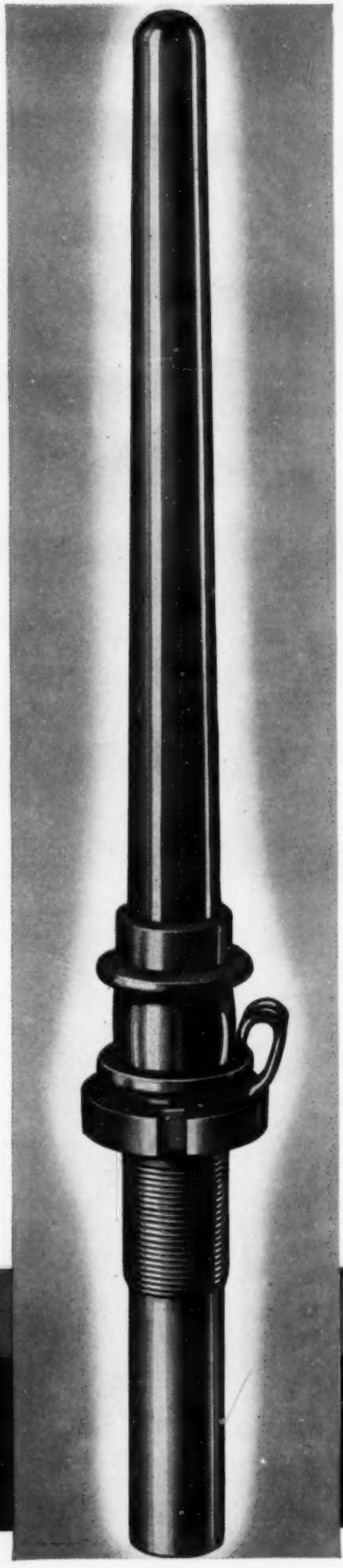
CONTAINER CORPORATION OF AMERICA

MODERN TEXTILE PACKAGING

Marquette
ROLLER BEARING COTTON SPINDLES

with **FULL-FLOATING FOOTSTEP BEARING**

. . . . . insure continuous operation and reduce your costs. The standard Marquette cotton spindle, equipped with aluminum adapter (as illustrated) for use with paper tubes, has been giving satisfactory service for seven years.



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Marquette METAL PRODUCTS CO.

CLEVELAND 10, OHIO

SUBSIDIARY OF CURTISS-WRIGHT CORPORATION

Manufacturers of · HYDRAULIC AND ELECTRIC WINDSHIELD WIPERS · FUEL OIL PUMPS HYDRAULIC GOVERNORS FOR DIESEL ENGINES · ROLLER BEARING TEXTILE SPINDLES AIR COMPRESSORS · PRECISION PARTS AND ASSEMBLIES

BYRD MILLER, WOODSIDE BUILDING, GREENVILLE, S. C.
WILLIAM P. RUSSELL, BOX 778, ATLANTA, GEORGIA
M. O. THOMPSON, 80 BOYLSTON ST., BOSTON 16, MASS.

and help the starving peoples in those sections of the world that we need to keep on our side politically, we should be pulling in our belts and facing the sacrifices necessary to take care of these foreign commitments with a proper understanding of what they really entail. Instead of that, like a blithe crew of irresponsibles, we are again capitalizing these losses and distributing them as imaginary gains. The reports in the newspapers some time ago that the New Deal was dead were apparently premature. Certainly, New Deal thinking is very much alive in the financial operations of today.

Most agricultural products are now selling for record prices, and government agencies which have issued statements on the subject admit that these prices are chiefly due to government purchases for our gifts to Europe. If a farmer who raised 10,000 bushels of wheat sold it domestically on credit to purchasers who could not pay for it later, either the farmer or some of his creditors must necessarily take a severe loss. Yet this same farmer, if he sells the wheat to his government for export to people who can't pay for it, never seems to dream that any loss is thereby entailed. He is happy, prosperous, and carefree, without ever seeming to realize that somebody is going to take the same kind of loss that would have been taken in a similar domestic transaction.

Whatever we ship abroad for relief purposes, whether foodstuffs, textile mill products, or machinery, is a total and complete loss as far as any immediate financial return is concerned, and we should not delude ourselves into thinking that such losses are contributing to prosperity. They may contribute to the prosperity of some future generation which will benefit from a stable, rather than a chaotic, Europe, but it is extremely imprudent of this generation to be capitalizing on any such expectations and blithely squandering the proceeds.

The recipe for the "prosperity" that we enjoyed in 1925 to '29 consisted almost entirely of one ingredient—inflation. The present "prosperity" contains this same ingredient in an even greater proportion than the last boom, which led to such disastrous consequences.

This report of the Bureau of Labor Statistics proudly pointed to the fact that employment in July topped 60 million for the second consecutive month, and this was cited as conclusive proof of prosperity. In this army of 60 million employed must undoubtedly be the many persons rejected by the draft boards as unfit for military service on account of being mentally deficient, illiterate, or just plain dumb. These persons are not normally employable and would ordinarily be a burden on their relatives, or public charges. Are they not just as much a burden on the national economy when receiving inflated wages for work that they are not capable of performing properly? Is not the citizen who is paying an absurd price for goods turned out by people of this sort taking just as much of a loss as if he were being taxed to support these incompetents? The fact that we have thrown millions of them into industries under the pressure of a frantic inflation should be cause for alarm rather than congratulation.

These people, after becoming accustomed to good pay checks, are going to be a far worse problem when thrown into unemployment than if they had remained there continuously. They will be embittered and anti-social and a fair prey for the agitators so ready to make capital of discontent.

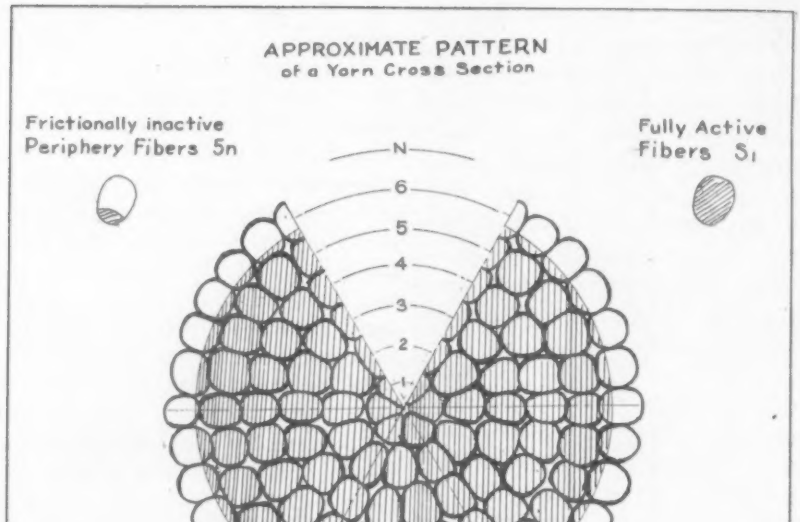
This report of the Bureau of Labor Statistics noted that "only" five industries showed downward trends in employment attributable to other than seasonal factors—machine tools, furniture, radios and phonographs, tires and tubes, and aluminum manufacturing. Though the bureau officials might feel that a downward trend in these five industries was hardly worth mentioning, it seems to us that this is a very important indication of a probable continuing trend. During about four years of war, so many things were withdrawn from the civilian market that there was a tremendous accumulated demand for such goods. There has, until recently, been a ready army of purchasers brandishing fistfuls of money and negotiable securities lavishly handed out by the government, hot off the printing press. Not only has this flood of money been rapidly passing out of the possession of its original owners and into channels where it will circulate less frantically, but the passage has jacked up prices to the point where the remaining easy money will buy less. We are entering a period when business will not be governed by the flow of fiat money, but when real values will govern.

The fact that as many as five large industries are listed by a government bureau as showing definite signs of a slump would indicate that the frantic rush to buy stuff regardless of price or quality is subsiding. A year ago all of the goods produced by the five industries listed were extremely scarce and tremendously in demand. Today, tires and tubes are so plentiful that they are subjects of cutthroat competition, and aluminum is available for immediate delivery. There are plenty of radios and phonographs, and furniture is becoming more plentiful. The war-inflated machine tool industry is catching up with demands.

It continues to seem to us that in periods of inflation like this, we should be looking facts squarely in the eye and preparing for the realistic conditions under which life must be soon lived instead of continuing to delude ourselves with the fatuous theory that an inflation can go on forever. We told ourselves that it could in the late 20's, and now those of us who should have learned better by bitter experience ought to be trying to put the brakes on an inflation instead of stepping on the gas.

True prosperity is always based on the actual production of goods and services on terms which can maintain this production indefinitely. As soon as greedy and shortsighted persons disturb the terms on which prosperity can continue, the whole productive and distributive apparatus is in danger of a collapse. We have seen such collapses repeatedly, and yet we never, never seem to learn by experience how to prevent them.

Cotton Yarn Structure Constants



By JOHN DUERST

THIS article reviews and combines several related articles published in past issues*. It shows the practical application of the Duerst formula and how, with its help, several important yarn problems may be solved. The formulas offered by Mr. Duerst are applied in the operation of his plant. They have been reviewed by outstanding textile journals in foreign countries, and technical writers have referred to their practical use. It is requested that correspondence relating to this article be directed to Mr. Duerst through this magazine.

THIS is a treatise to prove that Yarn Twist, Yarn Diameter and Yarn Strength calculations are based on a common underlying factor, namely, the number of fibers present per cross section.

1. Number of Fibers per Cross Section

By actual counting, the number of fibers per cross section in a yarn are:

$$S = \frac{3000}{cts.} \qquad (1)$$

With the help of the "Sums of numbers" law, the number of fibers can be calculated with the number of fiber layers "n" given:

$$S = \frac{6n\,(n+1)}{2} \qquad (2)$$

Since in both cases the "S" is equal to the indicated values, we can form the following equation:

$$\frac{3000}{Cts.} = \frac{6n\,(n+1)}{2} \qquad (3)$$

This equation, while basic for all three, must be "dressed" differently for each distinctly different character encountered in Diameter, Twist, and Strength calculations.

2. Diameters

If the diameter of a yarn = d,
its numbers of fiber layers = n,
and the diameter per fiber = f,
we have:

$$2nf = d$$

Further, we have:

$$\frac{n}{d} = \frac{1}{2f};$$

it appears therefore that $\frac{n}{d}$ is a constant.

This constant, if entered in

$$\frac{6n\,(n+1)}{2}$$

in place of "n," will furnish a new value. We have:

$$\frac{6n}{2d}\left(\frac{n}{d} + 1\right) = \text{D or Diameter-value constant.} \qquad (4)$$

3. Twist per Inch

While $\frac{n}{d}$ is the relative factor and constant for diameters, we

*John Duerst is research and technical engineer for the Clark Thread Company of Georgia, Clarkdale, Ga. Other articles by him appeared in the following issues: "The Duerst Formula" (for calculating the twist per inch in roving), January 1939; "The Duerst Method of Figuring Progressive Yarn Twist," December 1939; "Theory of Yarn Skein Strength," November 1940; "A Study of Roving-Yarn Diameters," April 1941; "Let's Look at the Roving Bobbin (A Study of Tension and Lay Control)," July 1941; and "Cotton Yarn and Thread," February 1946.

encounter the opposite here since "n" multiplied with twist per inch or: nt = constant.

Again, similar to diameter calculations, we enter "nt" into formula (2) in place of "n" and obtain a new equation:

$$\frac{6nt\,(nt+1)}{2} = K \text{ or twist-value constant} \qquad (5)$$

4. Fiber Friction and Fiber Friction Loss

The forming of a yarn or a strand of yarn is possible only through utilization of the individual fiber surface friction. Twisting is the medium to attain this. While we readily realize this, we do understand for other reasons that the exposed part of the periphery fiber surface friction is nullified as a working force to hold the fibers together.

Thus, in a fine yarn, due to the smaller diameter a greater percentage of surface friction is lost as compared with larger, coarser yarns. Hundreds of tests substantiated the assumption that approximately 5/6 of the potential periphery fiber surface friction is lost due to exposure or not being in contact with other fibers. This loss, as expressed in terms of fiber layers is therefore "5n".

This value added to formula (5) results in

$$\frac{6n\,(n+1)}{2} - 5n = S_1 \text{ or} \qquad (6)$$

the number of "working fibers" per cross section.

The "working fibers" should definitely be considered in connection with Twist and Strength calculations.

The author is inclined to ignore this factor in case of progressive twists, but since strength results are greatly influenced by the partial lack of surface friction, this factor must positively be used for strength calculations.

5. Twist Calculations when Incorporating Friction-Loss Factor

Progressive twists as the result of this method are more likely to furnish "Similar Twists" but, due to the wide range would not be very popular in America; in fact, some European twist lines even exceed this curve.

European spinners frequently use spindle speeds from 10,000 to nearly 12,000 rpm for yarn counts we would not want to run faster than 8,000 to 9,000 rpm. For this reason we can understand Europe's preference for a lower twist angle to permit the higher numbers to be spun at relatively higher twists.

The twist-value* formula for this wide range twist is:

$$\frac{6nt\,(nt+1)}{2} - 5nt = K \qquad (7)$$

6. Strength Calculations

Formula (6) represents practically the finished strength formula since it indicates the number of working fibers, which, when multiplied with the individual fiber strength "b" will indicate the strength of a strand.

$$\left(\frac{6n\,(n+1)}{2} - 5n\right) \times b = \text{Strength}$$

7. Evolvement of Formulas

Based on the foregoing information, the job remains to employ these basic formulas in such manner that, as a final result, we shall obtain easily comprehensive formulas to calculate twists and strengths according to numbers of fibers per cross section and not as per $\sqrt{\text{Cts.}}$ system, which is misleading. The following step by step development is, the author believes, self explaining and not altogether out of reach for regulation high school mathematics.

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*Twist-value. This expression does indeed invite an explanation. The author has been asked by a researcher for more definite elaboration. The definition may be put as follows:

The twist-value of a range of different yarn counts spun or twisted at similar (related) twists is the sum of the product of fiber layers × twist per inch—as compounded through the medium of the "Sums of numbers" law—or treated as an arithmetical progression. The twist-value of No. 1 yarn is the same as the twist-value of 50s; it is, therefore, a constant for a particular line of similar yarns.

Development of formulas for calculating twists and strengths according to number of fibers per cross section.

DIAMETERS OF Roving, Yarn & Threads

$$\frac{3000}{cts.} = \frac{6n(n+1)}{2} \qquad (3)$$

The Quotient of $\frac{3}{n}$ = constant
Substituting this constant for n in formula (2), we have:

$$\frac{6}{2}\cdot\frac{n}{d}\left(\frac{n}{d}+1\right) = D \qquad (4)$$

Multiply (3) with (4)

$$\frac{6}{2}\cdot\frac{n}{d}\left(\frac{n}{d}+1\right)\frac{3000}{cts.} = D \times \frac{6n(n+1)}{2}$$

at n = 100

$$\frac{1}{d}\left(\frac{1}{d}+1\right)\frac{1}{\text{Cts.}} = \frac{D}{3000} = \text{Constant}$$

t Constant = 100

$$\left(\frac{1}{d}\right)^2 + \frac{1}{d} - 2\,cts. = 0$$

$$\frac{1}{d} = \frac{1}{2}\left(\sqrt{1+8cts.} - 1\right)$$

$$d = \frac{M}{\left(\sqrt{1+8cts.} - 1\right)} \qquad (I)$$

The fiber layers "n" divided by diameter is a constant.

The "Sums of numbers" product based on this quotient is also a constant "D" or "Diameter-Value constant."

TWIST Conventional Progression

$$\frac{3000}{cts.} = \frac{6n(n+1)}{2} \qquad (3)$$

The product n x t = constant
Substituting this constant for n in formula (2), we have:

$$\frac{6nt(nt+1)}{2} = K \qquad (5)$$

Multiply (3) with (5)

$$\frac{6nt(nt+1)}{2} \times \frac{3000}{cts.} = K \times \frac{6n(n+1)}{2}$$

at n = 100

$$\frac{t(t+1)}{4\,cts.} = \frac{K}{3000} = \text{Constant}$$

at Constant = 100

$$t^2 + t = 2\,cts. = 0$$

$$t = \frac{1}{2}\left(\sqrt{1+8cts.} - 1\right)$$

$$t = M\left(\sqrt{1+8cts.} - 1\right) \qquad (II)$$

The fiber layers "n" multiplied with the twist per inch "t" is constant for the full range of counts twisted "similarly."

The "Sums of numbers" product for "nt" is also a constant "K" or twist-value constant, not considering the 5nt fiber friction loss of periphery fibers.

TWIST Wide Range - (Europe)

$$\frac{3000}{cts.} = \frac{6n(n+1)}{2} \qquad (3)$$

The product n x t = constant
Substituting this constant for n in formula (2), we have:

$$\frac{6nt(nt+1)}{2} = K$$

At a periphery fiber loss value of 5nt we have:

$$\frac{6nt(nt+1)}{2} - 5nt = K \qquad (7)$$

Multiply (7) With (3)

$$\left(\frac{6nt(nt+1)}{2} - 5nt\right)\frac{3000}{cts.} = k \times \frac{6n(n+1)}{2}$$

at n = 100

$$\frac{t(3t-2)}{cts.} = \frac{6k}{3000} = \text{Constant}$$

at Constant = 100

$$3t^2 - 2t - cts. = 0$$

$$t = \frac{1}{3}\left(\sqrt{1+3cts.} - 1\right)$$

$$t = 2M\left(\sqrt{1+3cts.} - 1\right) \qquad (III)$$

The fiber layers "n" multiplied with the twist per inch "t" is constant for the full range of counts twisted "similarly." The "Sums of numbers" product minus "5nt" (for loss of periphery fiber friction) is also a constant "k" or twist-value constant at periphery fiber loss considered.

STRENGTH Yarn and Thread

$$\frac{3000}{cts.} = \frac{6n(n+1)}{2} \qquad (3)$$

$$n = \frac{1}{2}\left(\sqrt{1+\frac{4000}{cts.}} - 1\right)$$

and at 5n loss of periphery fiber friction value we have:

$$\frac{3000}{cts.} - 5n = \frac{6n(n+1)}{2} - 5n$$

$$\frac{6n(n+1)}{2} - 5n = S_1 \qquad (6)$$

$S_1 \times b$ = Breaking Strength

$$Str. = \left(\frac{6n(n+1)}{2} - 5n\right) \times b \qquad (8)$$

$$Str. = bn(3n-2)$$

also $Str. \left(\frac{3000}{cts.} - 5n\right) \times b$

or, when value for n is inserted

$$str = b \times \left[\frac{3000}{cts.} - \frac{5}{2} \times \left(\sqrt{1+\frac{4000}{cts.}} - 1\right)\right]$$

$$str = M\left[\left(\frac{4000}{cts.} + 1\right) - \sqrt{1+\frac{4000}{cts.}}\right] (IV)$$

Due to loss of periphery fiber friction only 1/6 of their value is considered. When value "5n" is subtracted from full number of fibers we obtain the number of "Working fibers" S_1. These in turn multiplied by individual fiber strength "b" will indicate expected strength.

8. Recapitulation of Formulas

I) Diameter Formula $d = M \div (\sqrt{1 + 8 cts} - 1)$

II) Twist per Inch (conventional) $t = M \times (\sqrt{1 + 8 cts} - 1)$

III) Twist per Inch (wide range) $t = 2M \times (\sqrt{1 + 3 cts} - 1)$

IV) Strength Formula $Str. = M \times \left[\left(\frac{1200}{cts} + 1\right) - \sqrt{1 + \frac{4000}{cts}}\right]$

Every formula is preceded by a multiple.

9. How to Find Multiple Values

The next step is to find values for the various multiples. While the yarn structure formulas are representing clear mathematical values, multiples must be established from practical application, including the various conditions of mill run and local factors. In some instances actual measurements must be taken.

Diameter Multiple (I)

Take a strip of black card board about ½-inch wide. Wind on layer by layer of a certain yarn or thread. Close the layers up so as not to show through and still do not wind any on top of the others. Count these layers per inch and find multiple as follows:

$$M = \frac{\sqrt{1 + 8 \text{ cts}} - 1}{\text{No. layers per inch}}$$

Twist Multiples (II & III)

Long staple rovings or yarns need relatively less twist than short staple strands. The opposite is true in regards to counts. Higher counts need relatively higher twist than coarser counts.

While the structure formula takes care of the latter, the multiple must incorporate the fiber length factor and at the same time indicate the desired twist hardness degree.

In order to calculate such multiples we must find the correct medium from actual performance.

Let us consider first two rovings, both sizing 2 hank but one being made of 1″ cotton, while the other is made of 1.56″ staple.

Supposing we had closely watched both and found that the twists we had inserted ran well and turned out a medium soft twisted roving best suited for drafting at further process.

This twist was: 1.61 turns per inch for the 2.00 hk., 1″ cotton, and 1.11 turns per inch for the 2.00 hk., 1.56″ cotton. Based on this set-up, what twists should be inserted in any hank counts made of any length staple?

A common twist multiple for all hanks at various cotton staples may be calculated with the help of the "Straight line" law formula after the two separate multiples are found for the two hank counts in our example.

Multiple M_1 for 1″:

$$2.00 \text{ Hank} = \frac{1.61}{(\sqrt{1 + 8 \times 2} - 1)} = .516$$

Multiple M_2 for 1.56″:

$$2.00 \text{ Hank} = \frac{1.11}{(\sqrt{1 + 8 \times 2} - 1)} = .356$$

The common multiple to both may be expressed (according to straight line law formula):

General Formula $M = mL + b$ { m = slope, L = staple, b = constant }

$$m = \frac{.516 - .356}{1 - 1.56} = -.286$$

$$b = .516 - (-.286 \times 1) = .802$$

$$b = .356 - (-.286 \times 1.56) = .802$$

Values of "m" and "b" inserted in general formula, we have:

$$M = -.286\ L + .802$$

$M = .286\ (2.8 - L)$ = Multiple for roving twists

The twist per inch for all roving hanks at various staple lengths is therefore:

$$t = .286\ (2.8 - L)\ (\sqrt{1 + 8 \text{ cts}} - 1)$$

For combed yarns multiply "L" by 1.05.

In similar manner the twist multiples for yarns (also threads) of various hardness degrees can be calculated. The formula is

$$t = M^1\ (5 - L)\ (\sqrt{1 + 8 \text{ cts}} - 1)$$

the "M'," hereafter called "M," is of variable character depending on the hardness degree of twists demanded. This formula is representing conservative progressive twist increases toward fine counts.

For European consumption

$$t = 2M\ (5 - L)\ (\sqrt{1 + 3 \text{ cts}} - 1)$$

will be more appropriate, while in some cases not enough. The "M" in both cases for yarns ranges from .23 to .55.

The same formulas may be used for thread-twist calculations, but only if count is entered as the equivalent counts.

Strength Multiples (IV)

The strength multiple for this formula is easily found by dividing

$$\left(\frac{1200}{cts} - 2n\right) \text{ or } \left(\frac{1200}{cts} + 1\right) - \left(\sqrt{1 + \frac{4000}{cts}}\right)$$

into the actual observed strength. The resulting multiple from:

$$\text{Actual Strength} \div \left(\frac{1200}{cts} - 2n\right)$$

is again a product consisting of two factors which represent: first, an indicator of fiber strength and frictional force—second the length of the fiber and its consequent frictional force. Since the fiber length is known, "M" will have to be calculated as follows:

$$M = \frac{\text{Actual (Observed Strengths)}}{\left[\left(\frac{1200}{cts} + 1\right) - \sqrt{1 + \frac{4000}{cts}}\right] L}$$

For combed yarns take "L" 5% larger than grader's staple length, since, through combing, the staple value increases in length.

"M" as computed from many strengths averages is fairly constant for American cottons and about 10% higher for Egyptian.

We are now again in position to recapitulate the newly gained information which we arrange in table form (See Table 1), also including such multiple values as computed from actual results and mill performance.

In order to facilitate the calculation of a few examples we bring some of the necessary formula values pre-calculated in table form (See Table 2).

Examples:

1. Find medium twist per inch for 2.00 hank cotton roving made of 1¼″ combed cotton.

$t = .286$ (Table No. 1 Mult. for Med. Twist) $\times$ $(2.8 - 1.05L)$ (Staple Factor 5% longer Staple due to combing) $\times$ $(\sqrt{1 + 8 \text{ cts}} - 1)$ (See Table No. 2 "D" Values)

$t = .286 \times 1.49 \times 3.12 = 1.33$ turns/in. (Actual 1.34)

2. Find medium twist per inch for 55s counts made of 1¼" combed cotton.

$t = .33 \times (5 - 1.05L) \times (\sqrt{1 + 8\ cts} - 1)$

$= .33 \times 3.69 \times 20 = 24.35$

Find medium twist per inch for same 55s but made of 1" carded cotton.

$t = .33 \times 4 \times 20 = 26.4$ turns per inch

3. Find medium twist for 12s/4, 1" cotton (carded).

$t = .55 \times 4 \times (\sqrt{1 + 8 \times 8} - 1) = .55 \times 4 \times 4 = 8.8$ turns per inch.

4. Figure the laps per inch of roving wound on bobbin

(a) for 2.00 hank counts

(b) for 8.00 hank counts

laps/in. for 2.00 hank $= 4 \times (\sqrt{1 + 8\ cts} - 1) = 4 \times 3.12 = 12.48$

laps/in. for 8.00 hank $= 4 \times (\sqrt{1 + 8\ cts} - 1) = 4 \times 7.06 = 28.24$

5. Find picks per inch for 55s yarn:

Picks per inch $= 10.4 \times (\sqrt{1 + 8\ cts} - 1) = 10.4 \times 20 = 208$

Same for 20s/2 ply $= 10.4 \times (\sqrt{1 + 8\ cts} - 1) = 10.4 \times 8 = 83.2$

TABLE I

DUERST FORMULAS with practical multiples For Various Cotton Yarn and Thread Calculations

Subject	Process	Category	Multiple	Staple Factor	Yarn Structure Factor	Remarks
TWIST PER INCH	ROVING	SOFT MEDIUM HARD	.280 x .286 x .300 x	$(2.8 - L) \times (\sqrt{1 + 8cts.} - 1)$		MEDIUM TWIST PREFERRED MOSTLY
	* YARN	SOFT MEDIUM HARD WARP	.27 x .33 x .40 x .45 x	$(5 - L) \times (\sqrt{1 + 8cts.} - 1)$		FOR CONVENTIONAL SPEEDS
	* THREAD	SOFT MEDIUM HARD EX. HARD	.37 x .55 x .73 x .80 x	$(5 - L) \times (\sqrt{1 + 8cts.} - 1)$		MULTIPLES REFLECT LOCAL CHARACTER
DIAMETERS	ROVING	ON BOBB. LAPS/IN.	.25 ÷ 4 x	$(\sqrt{1 + 8cts.} - 1)$		SPACES BETWEEN LAPS OR WINDS
	YARN	PLAIN ON BOBB. PICKS/IN.	.1000 ÷ .0958 ÷ 10.4 x	$(\sqrt{1 + 8cts.} - 1)$		– – AS FOR CLOTH
	THREAD	PLAIN ON SPOOL ON SPOOL LAPS/IN	.100 ÷ .075 ÷ .071 ÷ 10.4 x	$(\sqrt{1 + 8cts.} - 1)$	BLACK WHITE	LOOSE HIGH TENSION HIGH TENSION AS FOR CLOTH
BREAKING STRENGTH	YARN	AMERICAN EGYPTIAN	2.00 x 2.20 x	$L \times \left[\left(\frac{1200}{cts} + 1\right) - \sqrt{1 + \frac{4000}{cts}}\right]$		120 YDS, WHEN COMBED, MULT. W./.05
	THREAD NATURAL	AMERICAN EGYPTIAN	.020 x .022 x	$L \times \left[\left(\frac{1200}{Cts.} + 1\right) - \sqrt{1 + \frac{4000}{Cts.}}\right]$		8 OR 10" SINGLE END BRK.
	THREAD MERC. & BLEACHED	AMERICAN EGYPTIAN	.025 x .030 x	$L \times \left[\left(\frac{1200}{cts} + 1\right) - \sqrt{1 + \frac{4000}{cts}}\right]$		8 OR 10" SINGLE END BRK.

* European Spinners Could Use

$t = 2M(5 - L)(\sqrt{1 + 8cts.} - 1)$

For their Preferred Wide Twist Range

L = Staple Length (Grader's) in Dec. inches

cts. = Hank Counts at Rovings
Cts. = Yarn Counts at Yarns
Cts. = Equivalent Counts of Threads

For Combed Yarns Add 5% to Staple Length

"D" represents $(\sqrt{1 + 8 \text{ cts}} - 1)$
For Diameters, Twists, Laps per inch

"F" represents

$$\left[\left(\frac{1200}{\text{cts}} + 1\right) - \sqrt{1 + \frac{4000}{\text{cts}}}\right]$$

For Strengths

TABLE 2

cts.	"D"	"F"	cts.	"D"	"F"	cts.	"D"	"F"
1	2.00	1138	12	8.84	82.7	50	19.02	16.0
2	3.12	556	14	9.62	69.7	55	20.00	14.2
3	4.00	365	16	10.36	60.2	60	20.92	12.8
4	4.74	269	18	11.04	52.8	65	21.82	11.2
5	5.40	213	20	11.70	46.9	70	22.68	10.4
6	6.00	175	25	13.16	36.4	75	23.52	9.63
7	6.54	148	30	14.52	29.4	80	24.32	8.86
8	7.06	129	35	15.76	24.6	85	25.60	8.17
9	7.54	112	40	16.92	20.9	90	25.86	7.25
10	8.00	101	45	18.00	18.5	100	27.30	6.60

Note: It depends of course what kind of cloth weave is desired. The multiple (10.4) may have to be chosen larger or smaller.

6. What skein strength (120 yds.) can be expected from 35s made of 1⅛-inch carded American cotton?

$$\text{Str.} = 2.00 \times 1\tfrac{1}{8} \times \left[\left(\frac{1200}{\text{cts.}} + 1\right) - \sqrt{1 + \frac{4000}{\text{cts.}}}\right]$$

$$\text{Str.} = 2.00 \times 1.125 \times (\text{"F"} = 24.6)$$

$$\text{Str.} = 55 \text{ Lbs.}$$

7. What skein strength may be expected from 60s combed Egyptian 1 5/16" staple?

$$\text{Str.} = 2.2 \times 1.3125 \times 1.05 \times (\text{"F"} = 12.80)$$

$$\text{Str.} = 39 \text{ Lbs.}$$

8. It is desired to make a 55s yarn (combed American) that should break 37 lbs. per 120 yd. skein. What staple length should be chosen?

$$\text{Str.} = M \times L \times 1.05 \times \text{"F"} = 37$$

$$2.0 \times L \times 1.05 \times 14.2 = 37$$

$$L = \frac{37}{2.0 \times 1.05 \times 14.2} = 1.24 = 1\tfrac{1}{4}"$$

9. A 30s yarn made of a certain staple breaks in the average 62 lbs. It is desired to make 40s yarn from the same material. What will it break?

$$62 : X = \text{"F"}_{30s} : \text{"F"}_{40s}$$

$$62 : X = 29.4 : 20.9$$

$$X = \frac{62 \times 20.9}{29.4} = 44 \text{ lbs.}$$

10. A 40s combed Egyptian yarn 1 3/16" staple is to be made of combed American. What staple length will give the desired strength (as 1 3/16" Egyptian)?

$$1\,3/16 : X = 2.00 : 2.2$$

$$X = \frac{2.2 \times 1.1875}{2} = 1\ 5/16"$$

Or:

$$2.00 \times X \times 1.05 \times \text{"F"}_{40s}^{\text{American}} = 2.2 \times 1.1875 \times 1.05 \times \text{"F"}^{\text{Egyptian}}$$

$$X = \frac{2.2 \times 1.1875}{1}^{40s} = 1\ 5/16"$$

11. A 3 ply thread—36/3—broke 2.28 lbs. What will 4 cord of the same material break?

$$\frac{2.28}{\text{"F"}\ (82.7)\ 36/3} = \frac{X}{\text{"F"}\ (112)\ 36/4}; \quad X = \frac{2.28 \times 112}{82.7} = 3.08 \text{ lbs.}$$

What will 9 cord of the same material break? (contraction not considered).

$$\frac{2.28}{\text{"F"}\ (82.7)\ 36/3} = \frac{X}{\text{"F"}\ (269)\ 36/9}; \quad X = \frac{2.28}{82.7} \times 269 = 7.4 \text{ lbs.}$$

12. A range of several yarn counts made of what was assumed to be 1⅛" cotton (American cd.). All observed strength results were divided by the "F" value at each sizing counts observed. The sum of the ratios over a length of time showed an average strength multiple

$$\left(M = \frac{\text{obs. str.}}{F \times L}\right) \text{ of } 1.89.$$

What staple was it actually?

$$1.89 : 2.00 = X : 1\tfrac{1}{8}$$

$$X = 1\ 1/16"$$

Dusting Cotton Bales for Fire Control

A simple method of making storages of baled cotton resistant to ordinary sources of ignition by dusting the surfaces with sodium bicarbonate powder, much as crops are dusted for insect control, has been suggested by W. E. Peterson, engineer of the Associated Factory Mutual Fire Insurance Companies.

It is reported that preliminary tests at the experimental station of the Factory Mutual Laboratories at Norwood, Massachusetts, show that the new dusting method is effective in preventing ignition from small external sources such as sparks or match flames. When exposed to heat under such conditions, the sodium bicarbonate powder releases an inert gas that reduces the oxygen content so that ignition does not occur.

Cotton bales dusted with sodium bicarbonate are not subject to the characteristic surface flash fires which usually occur and quickly involve all the exposed bales in the storage unit, it is claimed.

The powder is not expected to interfere with manufacturing as it will be blown from the fibers in the normal preliminary processing, and has no abrasive or corrosive action on bearings or machine parts.

Further tests are now under way to work out the practical details as to method of application, etc., the announcement said.

Indigosols—

The soluble and stable salts of sulphuric acid esters of vat dyestuffs

By BEN VERITY

Carbic Color & Chemical Co., Inc.

THIS IS the second and final installment of a two-part article describing the history, development and application of Indigosols. The first part, appearing in the August issue, covered plain shade dyeing, dyeing on wince, etc. Here, application in printing is discussed.

THE CLASS of dyes was soon found to be useful in printing white grounds of cotton and rayon dress goods, particularly when used with the stabilized azoic colors, sold under the trade names of Pharmasols, Rapidogens and Diagens in powder or grit-free solution form.

The cost of printing the Indigosols or other colors of this class is generally cheaper than similar patterns printed with vat colors. The method of acid ageing to develop the Pharmasol type of color enabled the Indigosol type to be developed under the same conditions when printed with suitable formulas to attain this end.

The Indigosols and Pharmasols are not so sensitive to exposure before acid ageing as are the vat colors before their particular type of ageing.

There are many methods of printing and developing the Indigosols to meet the many different circumstances and various fibers one meets today. These are all given in detail in the handbooks put out by the manufacturers and dealers.

When Indigosols are printed along with the stabilized azoic colors, it is customary to use formulas that will give prints that will come up quickly in the acid fumes, needed to develop the latter.

In practice the conditions of moisture, temperature, time and acidity within the acid ager vary greatly. Due to this, a color formula which proves satisfactory in one plant might be a failure in another.

Some plants use acetic acid only, others formic acid, but most of them use a mixture in various proportions. Formic is more corrosive but it springs up the color more quickly. This has led to the making of four different Indigosol O4B formulas shown in the accompany table. These will come up according to the circumstances under which they are acid aged and thus reveal the condition of the ager at the time the test colors are put through it.

FOUR INDIGOSOL 04B FORMULAS

	No. 1	No. 2	No. 3	No. 4
Indigosol O4B	40	40	40	40
Urea	80	80	80	40
Hot water	200	200	200	200
Neutral thickener	x	x	x	x
Ammonia conc.	10	10	10	10
Neutral chromate of soda cryst.	—	20	—	—
Bichromate of soda cryst.	—	—	13.3	—
Bichromate of ammonia cryst.	—	—	—	13.3
Ammonium chloride cryst.	—	—	10	10
Copper catalyst 6:128	—	—	12.5	12.5
Ammonium sulphocyanide cryst.	40	20	—	—
Chlorate of soda cryst.	30	—	—	—
Ammonium vanadate sol. 1:100	20	—	—	—
Indigosol Developer IRH (or equivalent)	—	20	20	20
All made with thickener to	1000	1000	1000	1000

The copper catalyst 6:128 is made as follows: Take 6 ounces of copper sulphate cryst., dissolve in one quart of ammonia conc. and make to one gallon.

Formula No. 1 comes up completely with a neutral steam or acid ageing at a temperature of 212° F. in about 4 to 6 minutes.

Formula No. 2. This color needs a high temperature of approximately 212° F. to develop completely in about 4 minutes in the acid ager.

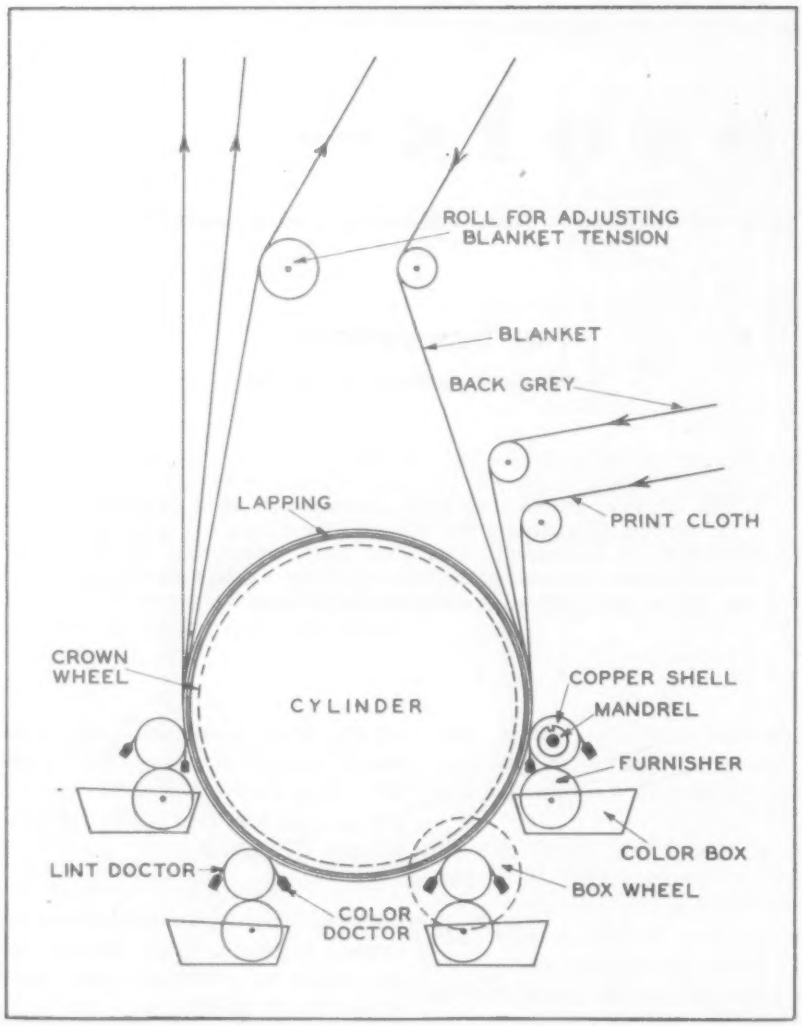
Formula No. 3. This comes up more readily than No. 2 when acid aged.

Formula No. 4. This comes up more quickly than No. 1, No. 2, or No. 3 when acid aged.

Testing for Results

If one prints the four colors on a piece of cotton cloth, dries well, then acid ages the trial under normal ageing conditions, then tests before soaping to ascertain which color is fully developed, the result will reveal whether the acid ageing is excellent, good or poor. This test can be made as follows:

Small pieces of No. 1, No. 2, No. 3 and No. 4, one to two inches



Sketch showing principle of operation of multi-color printing machine.

square are wrapped between two or three layers of white bleached cloth. They are thoroughly wet with tepid water containing a little wetting agent, then without squeezing, merely shaking off the large excess of water after rubbing gently to wet the print thoroughly, the cloth is held firmly by the dry ends on a hot steam dry can.

The water in the wet cloth will sizzle and dissolve any undeveloped color and this will be sucked to the drying side. When thoroughly dry, the test is put into a luke warm solution of nitrous acid (1 gram of nitrite of soda, 300 cc. of water and 3 cc. of sulphuric acid 168° Tw.) for 3 minutes, then washed and soaped.

There will be no blue stain if the colors are fully developed, thus showing the acid ageing to be excellently accomplished.

If No. 2 stains and No. 3 does not, the acid ageing is good, but if No. 3 stains and No. 4 does not, the ageing is poor. If No. 4 stains the ageing conditions are bad.

The result of the foregoing trial will indicate to the color mixer which formula to adopt for his plant.

If a hot steam chest is not available on which to dry the trial, one can put the wet test on the flat surface of an inverted Pyrex baking dish and dry with a hot electric iron pressed on the cloth until it is dry (taking care not to burn it), then treat as explained.

Indigosols have been made up as follows:

Color	4 parts
Hot water	20 parts
Urea	8 parts
Neutral thickener	55 parts
Ammonia conc.	1 part
Neutral chromate of soda 1:3 sol.	6 parts
Ammonium sulphocyanide 1:1 sol.	4 parts
Indigosol Developer IRH (or equivalent)	2 parts
Total	100 parts

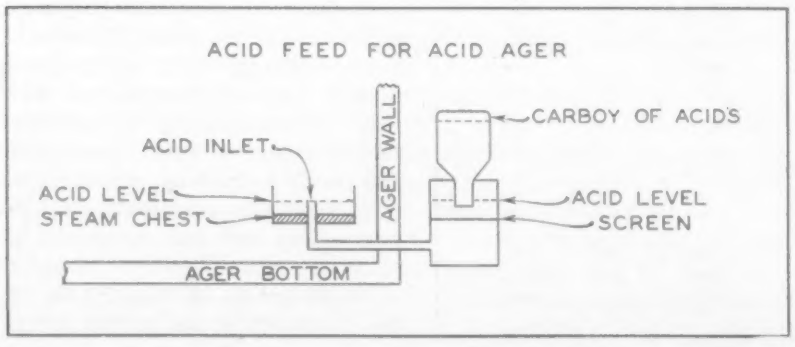
However, although the Indigosol Developed IRH helps in developing the color more quickly, it does induce sensitiveness to hard drying.

In printing with neutral chromate colors, reductions should contain never less than ½ ounce of chromate of soda per gallon of printing color.

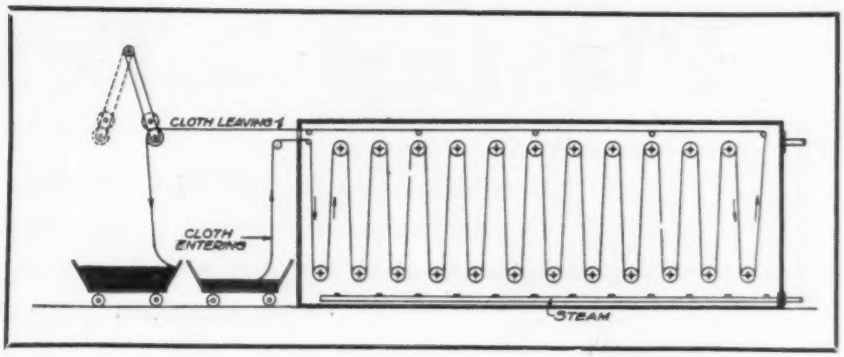
While the formulas previously given for Indigosol O4B are satisfactory for testing purposes, in practical printing it has been found that ammonium bichromate, as well as the Developer IRH, tends to make the color sensitive to stops on the dry cans. For this reason, when the acid ageing conditions are not wholly satisfactory, the formula given in "Formula A" is used to overcome this defect.

FORMULA A

Indigosol O4B	4 oz.
Urea	8 oz.
Hot water	24 oz.
Neutral thickener	x
Ammonia	1 oz.
Bichromate of soda cryst.	2½ oz.
Ammonia conc.	1 oz.
Ammonium chloride	2½ oz.
Copper catalyst 6:128	1¼ oz.
Made to	1 gallon



Sketch of a rapid ager used for after-steaming fabrics following the printing operation.



Indigosol Blue IBC is sensitive to over oxidation, but the formula shown in "Formula B" has been recently announced:

FORMULA B

Indigosol Blue IBC	3 parts
Water	20 parts
Urea	6 parts
Neutral thickener	x parts
Neutral chromate of soda 1:3 sol.	4½ parts
Ammonia conc.	1 part
Ammonium sulphocyanide 1:1 sol.	2 parts
Dehagen III (or equivalent)	½ part
Made to	100 parts

For aqua shades use 1½ parts Blue IBC and 1½ parts Green IBA. These colors will keep for twenty-four hours.

Indigosol Blue IBC can also be printed by the method shown in "Formula C" to prevent over-oxidation.

FORMULA C

Indigosol Blue IBC	2 parts
Urea	4 parts
Cellosolve (or equivalent)	2 parts
Water	37 parts
Neutral thickener	50 parts
Chlorate of soda 1:3 sol.	1½ parts
Sulphocyanide of ammonia 1:1 sol.	1½ parts
Ammonia	1 part
Vanadate of ammonia 1:100 sol.	½ part
Dehagen III (or equivalent)	½ part
Total	100 parts

The Indigosol colors after acid ageing are sometimes put through a solution of ½% bichromate of soda and 1% by volume of sulphuric acid 168° Tw. in the first box or tank of an open soaper at 160° F. to make sure no Indigosol is left undeveloped, as this would cause trouble later.

Indigosol Blue IBC and Olive Green IB cannot be treated thus as they would over oxidize.

Stabilized Azoic Colors in Printing

The stabilized azoic colors in solution or powder form are much simpler to handle than the Indigosols and are less susceptible to drying and other processes.

A typical Pharmasol formula is as follows:

Dyestuff solution	20 parts
Water	19 parts
Caustic soda sol. 32° Be'	1 part
Neutral thickening	60 parts
	100 parts

Print, dry, acid age, wash and soap.

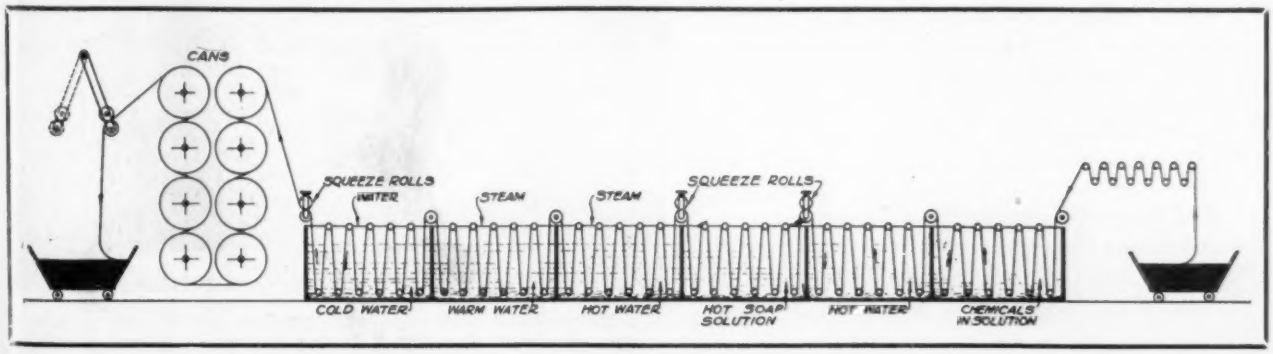
The Rapidogen and Diagen powders, etc., are usually made 4 to 5 ounces per gallon with one ounce of caustic soda 60° Tw. in a gallon of finished color, half of the caustic being used to dissolve the dye along with water, the other half put in the thickener.

Pharmasol Bordeaux BN and Pharmasol Seal Brown need special formulas. Some of these colors require neutral chromate of soda for their full development.

(Editor's note: In order for this article to be of value to the reader, trade names have been occasionally employed. In many instances, where trade names were used, prototypes of the products will prove satisfactory. If generic terms had been substituted throughout, it would have been impossible for the reader to identify the product in question, or to adopt a prototype.

Where the term "Indigosol" has been used, the data applies to any dyestuff identical in composition and behavior, and throughout this article that name was used as a generic term.)

Diagram of an open soaper for the continuous washing of printed cloth.



Plastics vs Join Textiles?

If textiles are to war with plastics, its good strategy to know your enemy; if textiles are to join plastics, it's not a bad policy to know your partner.

Staff prepared

THE TEXTILE industry has had its eye on a comparatively recent new-comer to its field of competitors—the plastic industry. Though competition is still basic with American industry, sometimes it can get pretty rough with an old-timer in the field. This rough going has already been felt in some lines of textiles, and when a particular plant has been disturbed from its siesta to find a new-comer has the business, it is difficult to see any benefit derived from competition.

Without attempting in any way to determine the dollar and cents effect of plastics, and that's a broad term, on the textile industry or even a segment of the textile industry, it may be timely to review the overall picture.

The effect of plastics on the textile industry may be placed generally under four headings:

1. Plastics serve the textile manufacturing plant; e.g., insulators, gears, flooring, surfaces of thread guides, brushes, etc.

2. Plastics improve or style the textile product, thereby ultimately cooperating in the sale of textiles; e.g., laminates, products made of yarn or fabric combined with plastics, finishes, etc.

3. Plastics serve as a *new* textile and may be fabricated on textile equipment; e.g., new yarns, staple fibers.

4. Plastics replace textiles; shower curtains, umbrellas, baby pants, draperies, etc.

Whether the textile industry decides to combat concertedly the efforts of the plastic industry, or to join hands in giving the consumer the product that he wants, is besides the scope of this article. It is, however, pointed out at this time that there is less discussion about "battle of the fibers" and more comment on "intermarriage of fibers" (blending and styling) with the end-view of satisfying consumers.

The accompanying photographs indicate a trend of plastics under the four headings listed, and if textiles are to war with plastics, it's good strategy to know the enemy; if textiles are to join plastics, it not a bad policy to know your partner.

A transparent rain cape and hood of polythene, a new type of plastic developed during the war. DuPont photo.

A new textile: Saran used as furniture covering. Other uses range from automobile seat covers to screen wire. National Plastic Prod. photo

Replacing textiles: Plastic sheeting for aprons, draperies, and table cloths. Heribert, Inc., photo.

Serving textiles: Nylon-bristled furnisher brush installed on textile printing machinery. DuPont photo.

Improving textiles: Showing results of laundering two wool sweaters, originally the same size. Sweater girl wears was treated with shrink preventive; one she holds was not. U. S. Rubber Co. photo.

Time Lag in Quality Control Eliminated at Revolution

THE MANAGEMENT of Revolution Cotton Mill of Greensboro, N. C., has recently patented a new device which eliminates the time lag in quality control. The invention was intended to allow more cloth to be wound onto a roll as it is woven, but it was found to be of more importance in quality control.

The number of yards of cloth wound on one roll may be increased to several times the usual amount with the use of this new facility, thus eliminating the necessity of removing the cloth roll after one or two hundred yards of cloth have been woven.

The new development includes the substitution of a guarded opening in the floor and a V-frame below. As cloth is woven, it passes through the guarded opening in the floor onto a cloth roll mounted on the V-frame below. The roll suspended on the V-frame is wound by a roller which is geared to the loom by a chain and sprocket. As more cloth is wound, the roll core gradually slides up one side of the frame, and the amount of cloth that can be taken up by the device is limited only by the size of the frame.

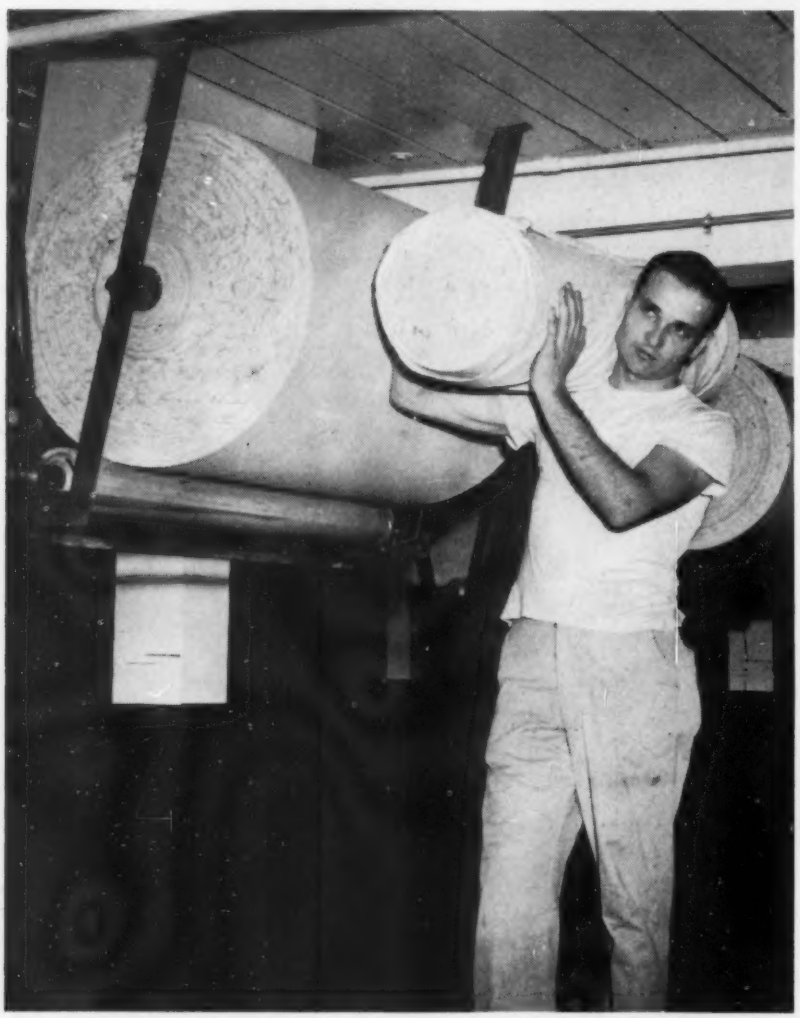
The larger rolls, which may take several thousand yards of cloth, actually may be handled more easily than the conventional cloth roll. They are removed and transported by a rolling jack truck. The new device allows cloth inspectors to walk along a double line of the suspended rolls and to check the cloth for quality. Each V-frame is numbered to correspond with the loom above it, so that the inspector may signal the weave room and have defects corrected immediately.

A few additional advantages gained by use of the device are as follows:

1. The necessity of sewing cloth together at the end of rolls is eliminated.
2. Removing smaller rolls from loom frames is eliminated.
3. Savings in thread and cloth are facilitated by abolishing the necessity of stitching rolls together.
4. A reduction in number of portable sewing machines needed to stitch rolls together is effected.
5. Efficiency in production and quality control is improved.
6. Looms can be kept in better adjustment by spotting and correcting defects promptly.
7. Confusion, resulting from movement of trucks or cloth roll conveyors in the comparatively narrow aisles of the weave room, is eliminated.
8. Telescoped cloth on the loom roll, often resulting in oily cloth, is avoided.
9. Conscientious weavers have an opportunity to see a larger portion of the cloth as it comes off the loom, thus allowing observation of defects.

Revolution Cotton Mill has already adopted the device to three hundred of their 2000 looms.

An operative shows the difference in size between a conventional roll of cloth and that wound on the device developed at Revolution.



Upper photo, one of the looms at Revolution that are equipped with the new device. Note that cloth is led through a guarded opening in the floor to a V-frame below. In the lower illustration, an entire room of V-frames is shown. Inspectors are able to check quality of cloth as it is produced.

THIS is the second installment of a series covering the principles involved in the different types of winding machines, how they should be operated and maintained, and other details. The first article appeared in the August issue and began a study of the No. 50 winding machine. Covered in the first installment were spindle drives, packages, winds, operating speeds, gainer mechanism, traversing mechanism, and thread guides. This is a continuation of discussion on the No. 50 machine.

THE BUILDING of a firm package to the desired density on a precision winder is obtained by a combination of the correct amount of tension on the yarn and the proper amount of pressure on the thread guide.

The guide is held against the surface of the package by the traverse frame back, which is attached to the traverse frame. The traverse frame is supported at the rear end by the cam shaft bearing of the gainer case and at the front end by the cam shaft bushing; thus it pivots around the cam shaft as a center. A counterweight on the lower portion of the traverse frame balances it and keeps the thread guide from falling away from the package.

Diff Tension and Pressure

Tension and pressure must be considered together in building a satisfactory package, the proper amount of each being necessary to prevent bulging at the ends or to prevent a concave surface on the package. To control each, and to maintain the correct relation between the two as the package increases in diameter, the differential (usually called "diff") tension and pressure attachment is provided, as shown in Figs. 10 and 11.

The method of tensionizing the yarn is usually by passing the end between two finger tensions, or grids, one of which is fixed and the other movable. The bars of each grid are so spaced that they do not come in contact with each other but permit the end to take a serpentine path between the two rows of bars. The movable tension is pivoted around a vertical rod at the back of the pair and is forced against the yarn by the tension weight on the diff tension lever, which is mounted on the diff pressure lever just to the right of its pivoting point, as shown in Figs. 10 and 11.

The diff pressure lever (A) is connected to the traverse frame counterweight by a connecting rod (C), so that as the package diameter increases, thus increasing the yarn speed, the diff pressure lever rises from a horizontal position, around its pivot, into an angular position, which diminishes the amount of pressure applied by the weight to the traverse frame and the thread guide.

Since the diff tension lever (B) is attached to the diff pressure lever, and is connected to the movable tension by another connecting rod, as the diff pressure lever rises it moves the pivot point of the diff tension lever to the left, thus causing the diff tension lever to rise from its horizontal position at the start of winding into an angular position, (*see Figs.* 10 *and* 11) which diminishes the amount of pull exerted against the movable tension and diminishes the amount of tension applied to the yarn, to compensate for the increasing yarn speed.

Figure 10 shows the positions of

the diff tension and pressure levers at the start of winding a package. Both levers should be horizontal at this position (Fig. 10 shows the levers a little above horizontal), so that the maximum effect of the tension and pressure weights is applied to the yarn when the yarn speed is lowest. As the yarn speed increases, from the increase in package diameter, both tension and pressure must be decreased to compensate for the increasing speed of the yarn. The proper rate of release in tension and pressure can best be obtained if both levers are horizontal at the start.

Releasing Tension and Pressure

The rate at which tension and pressure are released is determined by the position of the connecting rod (C in Fig. 10) in the adjuster (D) attached to the traverse frame counterweight. The rate of release is lowest with the connecting rod in the top notch of the adjuster, which would give full release (diff tension and pressure levers in vertical position) at the maximum diameter of package which can be wound on the No. 50. In winding smaller diameter packages—and if it is found necessary to obtain this maximum release at the smaller diameter—the connecting rod is moved to a lower notch in the adjuster.

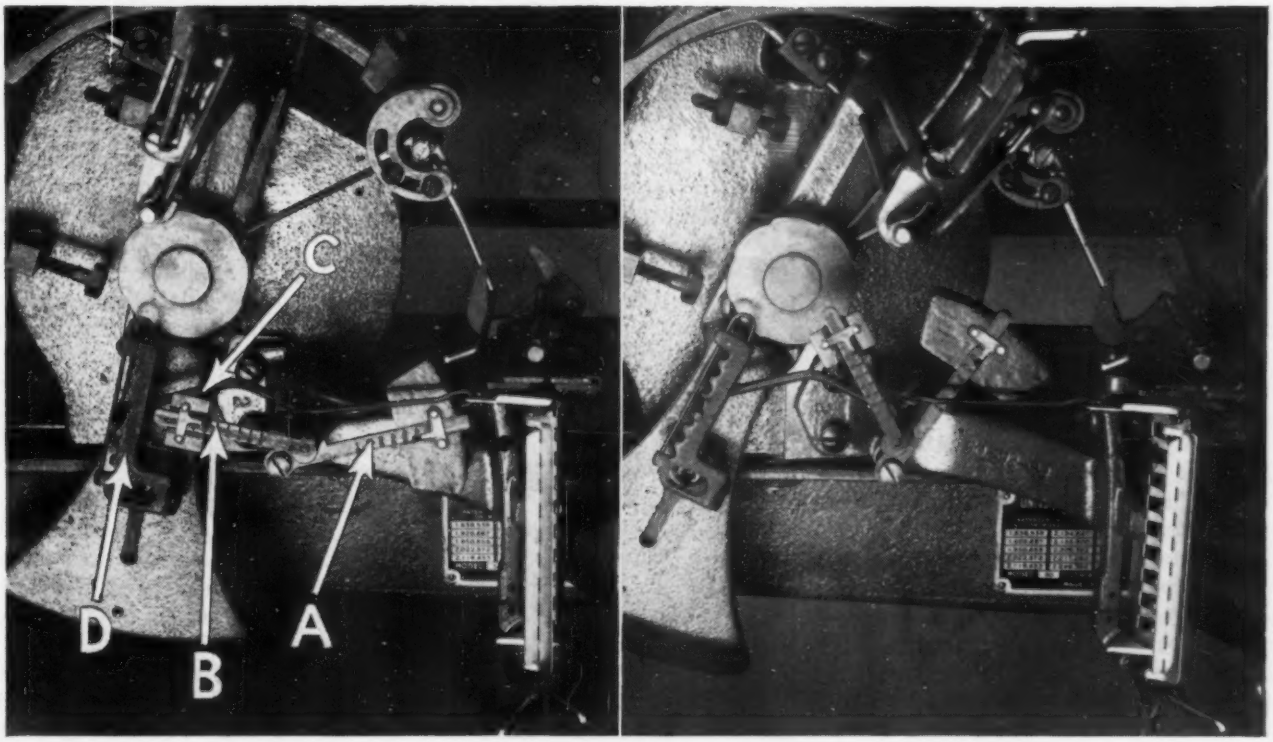
It will be observed that the tension and pressure weights may be moved along their respective levers and thus vary the amount of tension or pressure applied to the yarn. A detent is riveted to each weight and engages in notches in the levers to hold the weight in position on the lever. Tension and pressure weights of various sizes are provided. The proper weights to be used will depend upon the type of yarn, count, density of package desired, and other factors.

The important thing to remember in building a satisfactory package on a precision winder is that the first layers of yarn wound must be under sufficient tension and pressure to give a firm base upon which to build the package.

If insufficient tension and pressure are used, the compression of the outer layers of yarn will force the inner layers out along the tube or cone and cause unsightly bulging at the ends of the package. It is impossible to predetermine the correct weights to be used, or their positions on the levers; nor is it possible to predetermine the proper rate of releasing tension and pressure. These can only be obtained by experiment. However, once the correct weights, and their positions on the levers—as well as the position of the connecting rod in the adjuster—are determined by test for a given yarn on one spindle, other spindles may be similarly set up and will produce similar packages. (This does not apply to the winding of fine denier filament synthetics, which require special treatment and will be dealt with later in the series.)

The function of the diff pressure weight is to keep the thread guide always pressed against the surface of the package. Tension on the yarn tends to pull the guide away from the package, so that enough pressure must be supplied to overcome that tendency. In addition to holding the guide against the package, pressure on the guide supplements tension in building

Fig. 10. (left) Diff tension and pressure attachment; A, diff pressure lever; B, diff tension lever; C, diff pressure connecting rod; D, diff pressure adjuster. Fig. 11. (right) Diff tension and pressure attachment, showing positions of levers and weights at large diameter of package. The angular position of the levers has released tension and pressure on the yarn by diminishing the pull on the two connecting rods.



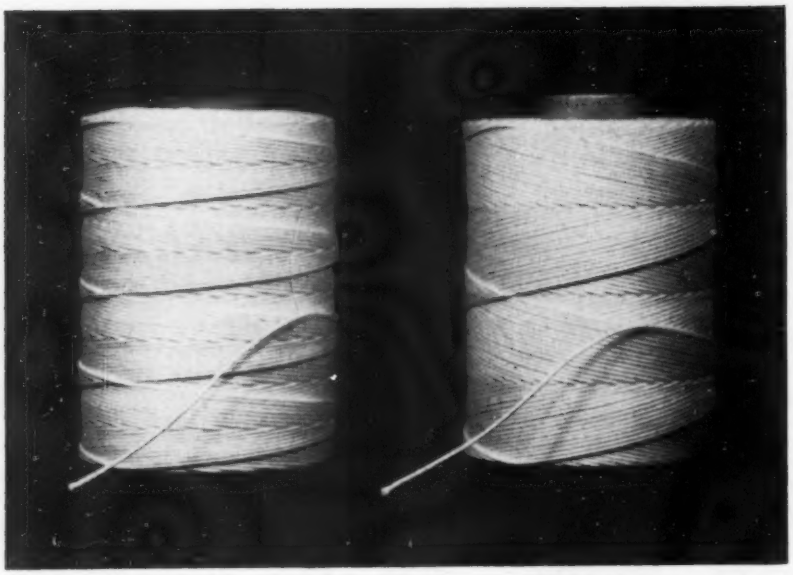


Fig. 12. Package at left has four winds, and there is a tendency toward bulging on the ends. Package at right has two winds; observe that the tendency to bulge has been eliminated.

a firm package. An indication of too little pressure—or too much tension for the pressure being used—is observed when the surface of the package is concaved (low in the center and high at the ends).

Number of Winds to Use

The overcoming of unsightly, bulging packages is the bane of existence to most winder fixers. Mention has been made of bulging at the ends being caused by not using enough tension and pressure at the start of winding the package; there is another factor which must be considered in that connection—the number of winds to use. As covered in Article 1, the number of winds is the number of revolutions the spindle, or package, makes while the thread guide is making *one stroke*.

The number of winds determines the angle at which the yarn is laid across the surface of the package to produce a self-supporting package, the smaller the number of winds, the greater the angle (from the vertical) and the sharper the "knuckle" at the end of the stroke.

Generally speaking, fewer winds will produce straighter ends on the package, but it should be remembered that the fewer the number of winds, the slower the spindle speed must be, which means a loss in production. Consequently, good winding practice is to use as many winds as possible and still produce satisfactory packages with straight ends.

Also, it is well known that packages with more winds will deliver better at the succeeding operation, since the tension on the yarn as it comes off will be more uniform from end to end of the traverse. Figure 12, at left, shows a bulging tube wound with 4 winds; at right, the same tube with the bulge overcome by using 2 winds.

Two and one-half or three winds are the ones most commonly used in winding cotton yarns on commercial cones or tubes to an outside diameter of five or six inches. In some cases it becomes necessary to use two winds, because of the type or count of yarn being wound, or other conditions; however, it is seldom necessary to use less than 2½ winds, even in winding on ⅝" hole parallel paper tubes, one of the most difficult winding jobs ordinarily encountered, particularly when wound to an outside diameter of six inches, the maximum for the No. 50 machine. However, if the yarn is strong enough to stand the tension needed at the start of winding, even these tubes can usually be wound with 2½ winds.

Fig. 13. Shown at A is traverse frame back for 9°15 coning; at B, the traverse frame.

Before getting away from the winding of packages with straight ends, free from bulging, it might be well to point out that—as all experienced winder fixers know—natural cotton yarn is much more difficult to wind, without bulging, than is yarn which has been dyed or bleached. Natural yarn has more elasticity and is springy because it still contains the natural waxes of the cotton fiber; dyed or bleached yarn is not nearly so springy, so that it will lie in place and does not have the tendency to bulge that natural yarn has.

Changes Necessary in Winding Cones and Parallel Tubes

As has been stated, the traverse frame back is attached to the traverse frame. It supports the thread guide holder and transmits pressure to the thread guide by pressing against the holder. The face of the traverse frame back is milled smooth where it contacts the thread guide holder, and the upper edge of the back is milled at an angle from the face to take the lip of the thread guide holder.

Since the face of the thread guide must be flat against the surface of the package, it can be seen that the upper face of the traverse frame back must be parallel to the *surface* of the package. Therefore, the same traverse frame back cannot be used for all types of packages; one back can be used for all types of parallel tubing, but a different back must be used for each different taper of coning.

For coning, the milled face of the back is a section of a spiral in form, the angle conforming to the

surface of the particular taper of coning being used. For instance, on 5°57′ coning the milled face is so shaped as to cause the thread guide at its point of contact with the surface of the package, to move in a straight line at an angle of 5°57′ from the axis of the cone. This permits the thread guide to follow the surface of the package and distribute pressure uniformly from one end to the other of the stroke. Figure 13 shows the traverse frame back for 9°15′ coning, with porcelain faced pick-up guide.

In changing from parallel tubing to coning, or vice versa—or from one taper of coning to another—it is necessary to change the traverse frame back, the thread guide holder, the threading bail (if one is used), as well as the package holder. Each thread guide holder is stamped to indicate its taper, and on the coning traverse frame backs, the taper is indicated on the casting. The three tapers of cones wound on the No. 50 are 9°15′, known as "Nutaper;" 5°57′, "regular coning;" and 3°30′, generally used on filament synthetics.

For parallel tubing, the milled face of the traverse frame back is parallel to the axis of the tube; consequently, the same back and thread guide holder are used on all types of parallel tubing.

Spindles, Copholders, and Cone Holders

Confusion in terminology is frequently encountered in referring to the spindle, the copholder, and the cone holder. The spindle of the No. 50 is the part carrying the driving pulley, and it extends out only about two inches from the front bearing in the frame of the machine. It is not usually changed in changing from coning to tubing, or vice versa.

The copholder is the part that holds the parallel tube, which is usually of paper with a ⅝" hole and about ¾" longer than the traverse. The copholder screws into the end of the spindle, with a left-hand thread, since the spindle turns clockwise. The type most commonly used is fitted with a screw in the outer end which expands the end of the copholder and locks the tube in place.

Another type, which is more quickly donned and doffed, is fitted with a flat steel spring along the surface of the copholder. The edges of the spring bite into the paper and prevent it from turning on the copholder. Both types of copholders mentioned are shown in Fig. 14.

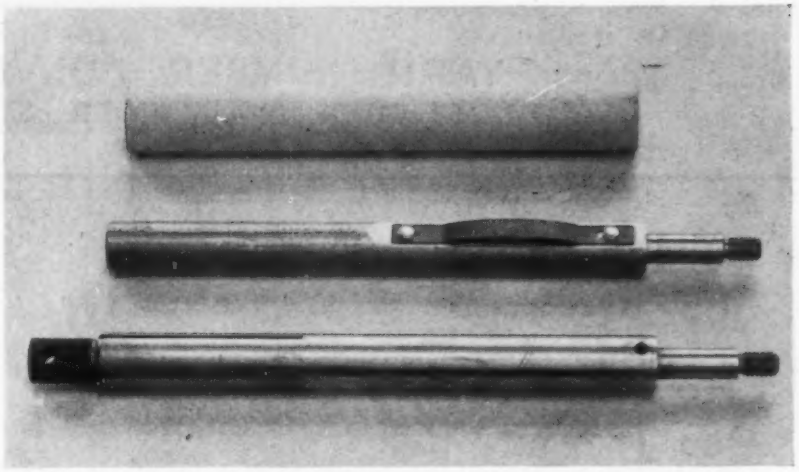


Fig. 14. Top, ⅝"-hole paper tube as used on the No. 50; center, quick-donning and -doffing copholder; bottom, screw-type copholder.

The cone holder, made in different tapers, is the part which holds the paper cone. It is held on a spindle extension, which screws into the spindle, by setscrews. On machines purchased to wind cones only, a longer spindle is usually furnished, being the same length as the regular spindle plus the extension. This obviates the need of the spindle extension and gives more rigidity. However, if it is expected that the machines are to be used for both coning and parallel tubing, it is important that the shorter spindle be specified, with spindle extensions being used when winding cones. This simplifies changing from one type of package to the other, since there is no necessity of changing the spindle.

(Article 3 will appear in an early issue. Upon completion of the series, the articles will be reprinted as a booklet. Reprints of each installment as they appear are not available.)

Otis Says Lack of Safety Devices Caused 1946 Elevator Accidents

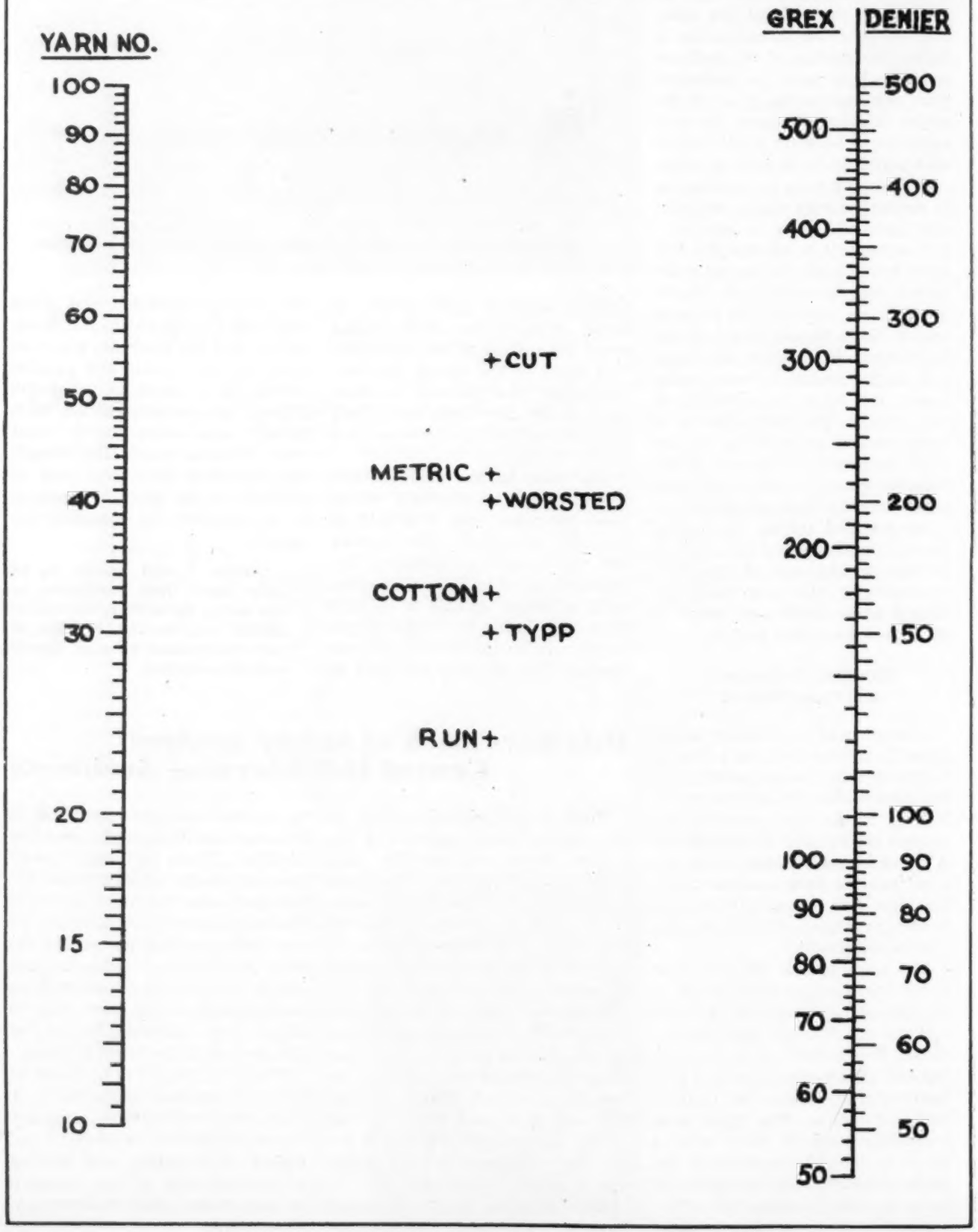
From a comprehensive study of elevator accidents reported in the United States during the past year, the Otis Elevator Company has announced its belief that nearly all could have been avoided if proper safety devices had been in use and if the elevators had been of modern construction.

There were 251 persons injured in accidents analyzed, according to the announcement, and all but 21 were hurt when entering or leaving elevators. They opened hoistway doors and fell down the shafts, were on the landings at the hoistway entrances, or were in the cars at the car entrances.

Most of these accidents would have been avoided if modern safety devices had been installed in the elevators concerned, according to Otis. These include hoistway door interlocks, which prevent the hoistway door from opening unless the car is there, and prevent the car from starting up unless the door is locked; car door switches, which prevent the elevator from starting unless the inner door is closed; and, automatic leveling of the cars with the landing floors.

The study is said to be based on accidents reported by the 247 U. S. field offices of the Otis company. It covers accidents to all types and makes of elevators and moving stairways called to the attention of and investigated by Otis representatives.

YARN NUMBER CONVERSION
TO GREX AND DENIER SYSTEMS



Nomogram

Yarn Number Conversions

This chart is used to convert yarn numbers in any length/weight system to denier or grex units. A straight-edge is extended from the yarn number on the left hand scale through the cross-intersection adjacent to the name of the numbering system (center of chart) to the right hand scale which may be read in either grex or denier units.

Thus, to convert 30s worsted yarn to denier (or grex), a line is drawn from 30 on the left scale through the worsted cross intersection to the right hand scale, where a value of 265 denier (or 290 grex) is read off. To convert from grex or denier units to yarn numbers, the reverse procedure is followed.

The chart may also be used as to convert from one yarn numbering system to another in two steps. Thus to convert 30s worsted to the cotton system, a line is drawn from 30 on the left scale through the worsted cross-intersection point to the right-hand scale. From the intersection with the right-hand scale (at 265 denier) a line is drawn back through the *cotton* cross-intersection point. This line intersects the left-hand scale at 20s, the corresponding cotton yarn number.

Management's Gain from a Good Accident Prevention Program

By C. J. HYSLUP*
Safety Director, Chatham Mfg. Co.

Prevention of human suffering, increase in production, improvement in housekeeping and efficieney, and better reputation of plant are gains cited here.

SAFETY was the first common meeting ground on which management and employees could get together and discuss their common problems.

Certainly there is no subject of greater mutual interest to both management and to labor than the prevention of accidents. Much of the understanding and friendship which exists in certain industries today is the result of cooperative effort created by employees and management working together to prevent accidents.

A study of industrial safety for the past 25 or 30 years as an organized movement shows that not only has the worker been greatly benefited by accident prevention programs but that management has gained immeasurably at the same time. Industrial Safety pays large dividends to both. Of that, there can be no doubt. Safety is definitely the joint responsibility of management and labor—there is no benefit for either at the expense of the other.

Let us review briefly some facts. Accidents in industry are not respectors of either person, place, or thing, and, therefore, intellectual knowledge or attainment is not a requirement in their prevention.

Safety is not an academic subject in the general sense of learning, nor is it formal education. It is not something that can be offered and accepted as a gift—it must be presented and accepted as a challenge. It cannot be had simply by engineering and building safety factors into things. While these safeguards have undoubtedly prevented many from getting injured or killed, they are invaluable as constant reminders that hazards do exist.

Safety is not a fact—it is a process of living. It is not a goal to be achieved—it is an ideal towards which we must be constantly striving. Its value lies in a knowledge of correct procedure and its success lies in an ingrained willingness to adopt these procedures. The objective of industrial safety work is to bring people to the point of careful and safe operation.

The purpose of industrial safety is to remove the obstacles that would prevent interest, satisfaction, and confidence on the part of the individual from becoming realized. Safety work, therefore, is doing those things that make working and living reasonably safe in an environment into which the machine age has introduced hazards of all types.

Safe workers are one of the greatest assets a company can have, and to have safe employees there must be an active safety organization based on the foregoing facts.

What does management gain from the time and money it spends on accident prevention work? Surely management would not employ safety directors, inaugurate

*Abstract of an address presented at National Safety Congress, Chicago, Ill.

Photos courtesy, National Safety Council

The most important reason for safety is the avoidance of human suffering. Shown in the photos above are the wrong (left) and right methods of pushing a roving truck. Note that in photo at left both of the operative's hands are exposed to probable injury, while the employee at the right is practicing "safety first" by keeping his hands inside the box.

safety programs, and constantly preach the gospel of safety to all employees unless the gains they receive would compensate their efforts. Well, we know that management gains—the past 25 years of accident prevention work with industries throughout this country have more than proved this fact. It has been proved that safety pays dividends.

Prevents Human Suffering

No individual interested in safety can conceive that there is any reason for preventing accidents which rates above the welfare of the worker. The most important reason for safety is the avoidance of human suffering. The reward flows to and affects the lives of the worker, his family and relatives. Pain, suffering, and wrecked lives are not necessary by-products of industry.

Nothing is more distressing than a serious accident to an employee, the effect of which is liable to permanently incapacitate a valued assistant. A good safety program means that your company and my company eliminate such cases to a great extent. The reduction in suffering, the maiming of employees, and loss of life, warrants all the time, effort, and expense involved in carrying on an accident prevention program. The greatest of all gains or dividends to management is the prevention of human suffering.

Accident prevention is an integral part of production. The real causes of accidents are likewise the causes of inefficiency and poor production. In the process of producing a saleable textile article from its raw state to a finished product a company will do well to consider safety as one of the aids in producing its merchandise for the market. It may be difficult to record in black and white just how much they will benefit by a well organized safety program, but it's there just the same. Experience has proven that.

Increases Production

The loss of a valuable worker through a serious, but avoidable accident can be recorded on paper, but the labor loss to the entire department, who automatically stop working at the time, never appears on the accident report. Nevertheless, it is there and management pays for it.

Accidents can really suck dry the life blood of an industry if they get out of control. Yes, safety and production are linked closely together. In fact, production depends on safety. Safety reduces costs and increases operating efficiency. It definitely speeds up production. Management really gains here. From a pure dollar and cents standpoint, safety pays.

You will agree that industry wants production, profits, lack of complaints, freedom from worry and problems, and a good reputation. An efficient safety program can do much to satisfy these desires. Freedom from accidents automatically increases production and profits, minimizes complaints, causes people to seek employment in that particular industry, eliminates many problems and does much to establish the good reputation of the industry in the eyes of the general public. All of these certainly can be classified as gains to management.

Improves Housekeeping and Efficiency

We have found in our company that, as a result of safety work, plant housekeeping and efficiency are greatly improved. Show me a clean and orderly plant and I will be safe in saying that a good accident prevention program is in

(*Continued on page* 173)

Manufacture of Woolen Nub Yarn

By LOUIS A. FIORI

THE FIRST part of this article appeared in the August 1947 issue, and covered raw materials, mixing, picking, and oiling. In this, the final installment, a detailed description of the carding process is presented, along with other pertinent information regarding the manufacture of this novelty type of yarn by the unique method described.

UNQUESTIONABLY the soul of woolen nubbed yarn manufacturing is the woolen card. It can well be said that in the series of processes and machines used to convert a mass of fibers into nub yarn, the card is the most indispensible. While it is true that the proportional parts of a mixture might vary, that the number and types of picking operations can differ, and that oiling might be done according to numerous conceptions, there is no substitute for the card.

Principles Involved. Going back to fundamentals and reviewing briefly a few carding principles, the scope of the mechanical changes necessary for the manufacture of this novelty yarn might be understood more easily. In the first place, the basic principle of carding is the transfer of a mass of fibers from a slowly moving surface (worker) to a fast moving surface (cylinder) where these fibers are dispersed over a large surface area. The reverse of this operation and next in order is the removal of these individualized (but not parallelized) fibers to another slowly moving surface, namely the doffer from which the web is delivered into a condensing unit.

Next, since all of these surfaces are practically a solid mass of sharp needle-pointed wires working with point against point, the stock tends to expand and become separated until the original tuft of fibers loses its identity and resembles a fleece of disassociated fibers. (See Fig. 1.)

In order to effect this dispersion of the fibers, the distances between the surfaces or settings are within well-defined limits accepted by the industry through years of operating experience.

It is easily seen that, with the application of these principles, as each tuft of grouped fibers is presented to the working parts of the machine, it is disentangled both laterally and longitudinally.

Now, in this new method of manufacture of nubbed yarn it is necessary to confute those carding principles previously enumerated and substitute therefor a seemingly crude but nevertheless unique group of principles. It is important to keep in mind that in this method of manufacture the rotundity of the nubs must be preserved, with the card performing a swirling and rolling action on the stock rather than one of carding and disassociating the fibers. Fantastic as this may sound, there is nevertheless much nubbed yarn being manufactured by the use of this principle.

To those who are unskilled in the art of carding or who are unaccustomed to unorthodox methods of processing, the following instructions might appear formidably difficult to place into operation. Nevertheless, if these recommendations are used as a guide the system will produce an excellent nubbed yarn with a minimum of trouble and waste.

Mechanical Adjustments. With no reservation whatsoever, it may be said that the breaker card is the soul of this procedure. By reversing the normal positions (not the direction) of all of its workers—that is, taking each worker from its normal working position, turning it around 180 degrees, and replacing it in the bearings from which it was originally taken—the wire teeth of the cylinder clothing work against the backs of the worker clothing points. Fig. 2

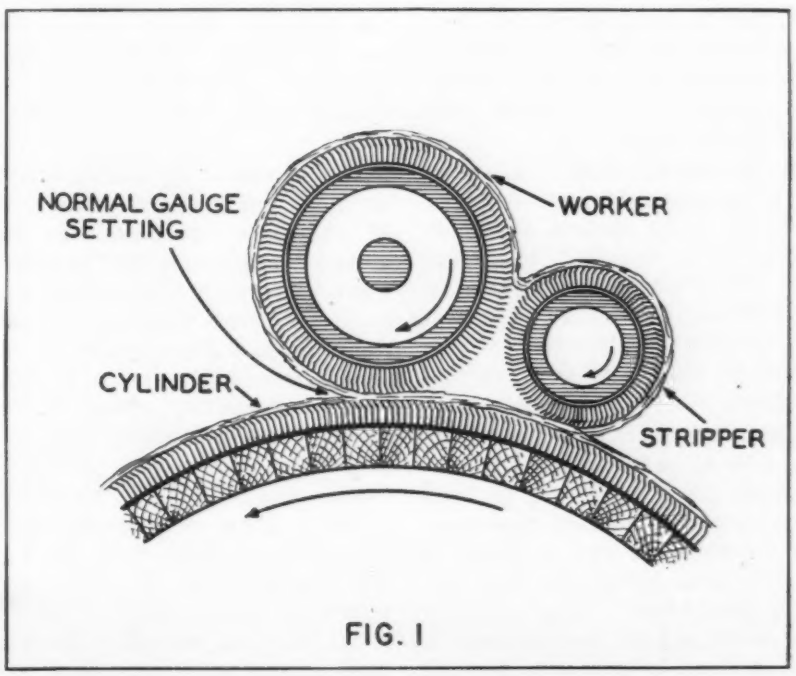


FIG. 1

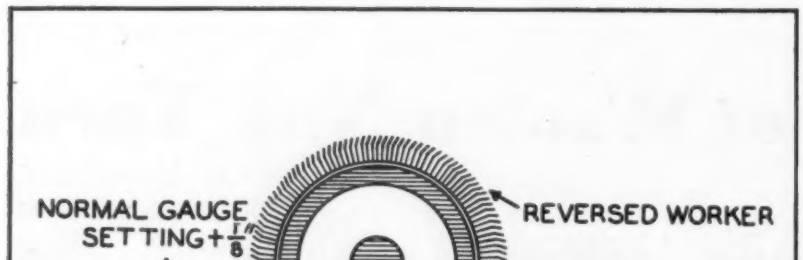


FIG. 2

clearly illustrates this principle which is in direct contrast to the principle illustrated in Fig. 1.

In addition to this adjustment, a strip of leather approximately ⅛" thick is inserted between the worker bearing shafts and the supporting bearing brackets. This causes the workers to be elevated, leaving clearance for the mixture of fibers and nubs to be carried forward without any carding action. Obviously, as the stock is carried on the surface of the cylinder clothing and reaches the points between the workers and cylinder, the fleece of fibers will tend to roll and lap back with the action becoming more pronounced and binding as the stock goes through the card.

If the breaker card is preceded by a breast having two or three workers on its surface, the same procedure is resorted to except that the strips of leather are approximately 1/16" thick instead of ⅛". Its workers, however, are allowed to remain in their normal positions.

Then the object of these adjustments is to carry forward an unbroken fleece of fibers so that there is a minimum of dispersion. By the time the web is delivered at the first breaker doffer, the nubs should have enough supporting fibers around their surfaces to enable them to be carried through the remaining processes without the "droppings" so prevalent in the same nubbed yarn manufacturing routines.

It can readily be seen that if these principles are utilized on the second breaker and finisher cards, the mechanical condensation of all the fibers in one direction would be so complete that from the standpoint of roving and yarn there would be no resemblance whatsoever. In fact, instead of a web, most likely the finisher doffer would deliver either nothing at all or an unrelated mass of knotted balls of fibers. Hence, the second breaker and finisher machines are adjusted somewhat differently than the first breaker card.

The insertion of leather strips ⅛" thick under all of the workers of the two machines is the same as the breaker card arrangement. The significant difference is that normal positions of the workers are not changed with the result that there is a certain amount of carding action on the fibers. However, carding is accomplished in such a way as not to disturb appreciably the sphericity of the original nubs in the mixture. At the same time, there is just enough fiber dispersion and separation taking place to form a webbing strong enough to be condensed into roving and spun.

Card Settings. Card settings are always critical, important, and subject to changes in accordance with varying conditions of the stock. In making up a group of settings, important elements of the mix such as staple lengths, general character, and quality of the fibers must be thoroughly understood. But, on the other hand, in a case (as in this discussion) where the original settings are disturbed, why not just pick a set of arbitrary gauges and adjust the various parts of the card to each other with just momentary accuracy. From a viewpoint of manufacturing nub yarn from the same mix day to day without any fluctuations in the characteristics of the raw materials, the answer might be "yes." The probability exists that once the initial plan is worked out there will be no recurrent adjustments except, perhaps, for minor mechanical changes. However, even repeat orders sometimes require fundamental organizational changes.

The underlying principles providing the solution of one plan do not necessarily suit the needs of another scheme. In view of this, the answer to having a group of constant settings is definitely "no." For a general interpretation of settings, the card is always set as if the stock were to be processed without the addition of nubs. In other words, treat the entire card with the best carding results in mind; and, after this routine is decided upon and accomplished, proceed with the previously recommended mechanical adjustments.

The gauge settings set forth in Table I afford a notion regarding general conditions utilizing medium and fine wools of good quality and short staple length. They are in no way meant to be accepted as being final and are given with the assumption that the cards are in good working condition. This is known as a "progressively" finer schedule of settings.

Organization Information

Controlling Size of Nubs. The size and solidity of the nubs are two of the most important points to notice since any inconsistency is traceable by the variations in

the finished fabric. Consequently, vigilant watchfulness plus exacting adjustments are prerequisites for the control of this property.

It is obvious that if the mechanical combination of fibers and nubs is not carried out effectively on the first breaker card, it is definitely prejudicial to the consistency of the remaining manufacturing procedure. Consequently, the web coming from the breaker doffer must be examined minutely. The nubs must be large, firm, and with very little apparent distortion. In addition, the web should be fleecy enough to be carried over convenient conveyors to the second breaker card.

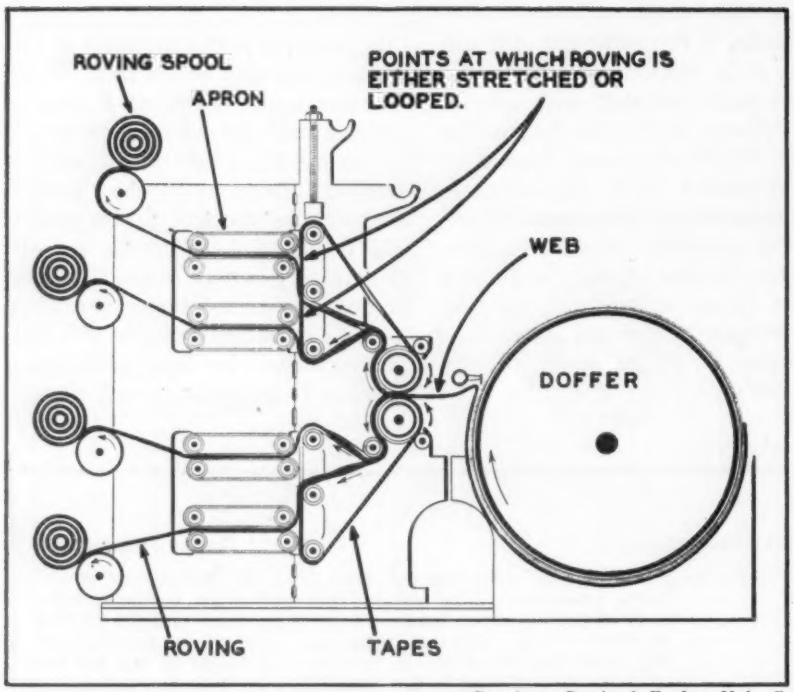
If for any reason smaller nubs are desired in the finished yarn, the reduction can begin at this point by setting the doffer to either a 24 or 26 gauge—whichever one results in the most suitable size of nub. The 22 gauge, as suggested in the table of settings, is only a tentative recommendation. For the most part, however, it is a good idea to first exhaust all other means of controlling the size of the nubs before resorting to this adjustment on the first breaker card because the same result can be attained effectively during later stages in carding without the inherent dangers of destroying the very core of the nub before it has an opportunity to incorporate itself with the surrounding fibers. In the majority of cases, an adjustment for smaller sizes at this point results in structure failure of the yarn. Therefore, for the purpose of nub size comparison it is best that the first breaker card deliver them as large as is possible. In view of this, adjustments for size variation should be made on either the second breaker or finisher cards.

In a case where the nubs are being delivered excessively large on the finisher card—the key point for judging their magnitude—the last worker on the output end of this card is lowered 1/32". If they are still too large, the next to the last worker on the same card is lowered 1/32". Further reduction in size can now be effected by setting the doffer from its original gauge of 26 to either a 28 or 30. After these three adjustments are made, if the nubs are still too large, it is recommended that the carder apply his skill with minute adjustments to the last two workers on the finisher card. Under no circumstances is it advisable to tamper with any other parts of the carding machine when a diminishment in size of nub is desired unless, of course, these means fail. In event of failure the only other recourse is to go back to the breaker card.

In contrast is the problem of increasing the size of the nubs when they are being delivered from the finisher card too small. Correction of this fault is made on the second breaker. Here, as on the finisher card, the last worker on the output end is raised 1/32", with an additional adjustment of 1/32" on the preceding worker being provided if the size of the nubs is still not satisfactory. In case additional fullness is necessary, each of the

TABLE I

Part Description	Gauge (American)
Feed Rolls—Metallic feed rolls are set according to the type of stock being processed. The bottom feed roll is set to the licker-in to about 3 gauges (22-24-26) on long stock and (24-26-28) on short stock. The top feed roll is set at approximately ¼" from the licker-in. If the top roll tends to lap up on itself, it should then be set farther away from the licker-in. Always test the bite of the feed rolls by passing a heavy piece of paper through them. There should be visible holes left in the paper.	
Licker-in Tumbler to Breast	26
Breast Workers	
First worker	26
Second worker	26
Angle stripper to Cylinder	26
First Breaker	
First Worker to Cylinder	26
Second Worker to Cylinder	26
Third Worker to Cylinder	28
Fourth Worker to Cylinder	28
Fifth Worker to Cylinder	30
Sixth Worker to Cylinder	30
Fancy to Cylinder	1-1½"
Fancy Stripper to Fancy	28
Fancy Stripper to Cylinder	28
Doffer to Cylinder	22
Doffer Comb to Doffer	28
Second Breaker	
First Worker to Cylinder	28
Second Worker to Cylinder	28
Third Worker to Cylinder	30
Fourth Worker to Cylinder	30
Fifth Worker to Cylinder	32
Sixth Worker to Cylinder	32
Fancy to Cylinder	1-1½"
Fancy Stripper to Fancy	28
Fancy Stripper to Cylinder	28
Doffer to Cylinder	24
Doffer Comb to Doffer	28
Finisher Card	
First Worker to Cylinder	32
Second Worker to Cylinder	32
Third Worker to Cylinder	32
Fourth Worker to Cylinder	32
Fifth Worker to Cylinder	32
Sixth Worker to Cylinder	32
Fancy to Cylinder	1-1½"
Fancy Stripper to Fancy	28
Fancy Stripper to Cylinder	28
Doffer to Cylinder	26
Doffer Comb to Doffer	28
Strippers	
All Strippers are set to the Cylinder at	28
All Strippers are set to the Workers at	28
Condenser	
Top Rub Apron to Bottom Rub Apron	26
Eccentric Stroke	¾"-1"



Courtesy, Davis & Furber Mch. Co.

Fig. 3. A four bank tape condenser.

remaining workers on this second breaker card can be elevated 1/32″ in their descending order from front to back.

Generally speaking, the greatest problem is the maintenance of this size to specified standards. At one time or another, even in the middle of a run, some adjustment may be necessary. So, if the changes are made at the recommended points, no trouble should be experienced.

Condensation of Roving. Condensing the roving correctly is another important point to keep in mind in the manufacture of nubbed yarn. It is a well established fact that the degree of hardness or softness of the roving determines to a large extent the facility with which it will spin on the mule. In the overseer's hands and "feel," as the yarn is being drafted and twisted simultaneously on the woolen mule spinning machine, is the answer as to whether or not the roving is being condensed properly.

After a few draws of the mule carriage, during which time the carder keeps his fingers constantly on the yarn being drafted and twisted, the experienced man ascertains with surprising accuracy just what degree of softness or hardness is required for the particular stock in question. In addition to impairing the character of the yarn, a mistake at this point usually causes an increasingly large amount of end breakage.

With reference to nubbed yarn, there is only one correct manner of condensing the roving—and that is as soft as it possibly can be made without pulling apart. For obvious reasons the nubs exert a disturbing influence with their bulkiness so it is sometimes difficult to keep the roving on the soft side. A few hints are given here to aid in overcoming this problem.

1. Set the top and bottom aprons to a number 26 gauge. The tension rolls should barely be felt. In a four-bank tape condenser there are four sets of aprons to set. See Fig. 3.

2. Set the eccentric stroke between ¾″ and 1″.

3. Preferably, the apron combinations should be one rubber and one leather with the leather one taking the fiber ribbons from the condenser tapes. In a four-bank tape condenser, the bottom and second deliveries would have a combination of leather top and rubber bottom aprons since the top aprons take the ribbon from the tapes. The third and top deliveries would have a combination of rubber top and leather bottom aprons since, in this case, the bottom aprons take the ribbon from the tapes. Oil is never applied to this rubber-leather apron combination. Of course, where it is not possible to have this particular combination, a series of leather aprons will perform satisfactorily.

4. After starting the roving through the condenser, it is well to watch carefully for double roving, stretched or looped roving, and hard or soft roving. In the case of double roving, the eccentric stroke is obviously too long. Reduce this stroke so that it will be closer to ¾″ than 1″.

If the roving is stretched or looped, it means that the condenser speed is either too high or too low causing the roving to be damaged at the points where the aprons are transferring the ribbons of fibers from the tapes. Upon inspection, the defect can be seen while the machine is in operation. It is a relatively simple matter to correct this fault by adjusting the apron and condenser speed to conform with the rate of delivery of the tapes.

For either hard or soft roving the adjustment is made by means of the tension rolls and not by changing the speed of stroke of the aprons, as is often the practice in carding rooms. Once the apron gauge setting, the eccentric stroke, and the speed of the aprons are established, the tension rolls are the key adjustments for sufficient

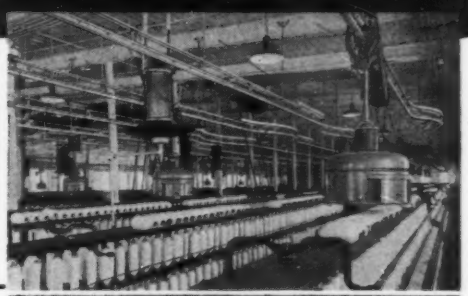
TABLE II

Waste Ends	Width of Tape	No. of Tapes	Width of Card
2	7/ 8″-19/32″	96	60″
4	7/ 8″-15/32″	120	60″
2	7/ 8″-13/32″	160	70″
4	3/ 4″- 7/16″	160	72″
4	9/16″- 3/ 8″	136	60″

Automatic Cleaning PAYS

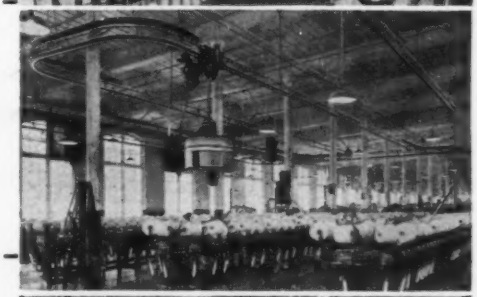
OVER SPINNING FRAMES

Lint is removed before it can accumulate and cause damage to yarn or spinning operations. Overhead travelling cleaners not only keep the frames clean but also send a blast of air toward the ceiling to eliminate hand cleaning of overhead equipment.



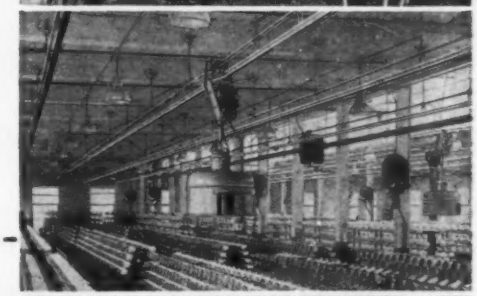
OVER WINDERS

High speed operation of winders can be greatly retarded by excessive lint. By preventing any accumulation on these machines maximum production is assured.



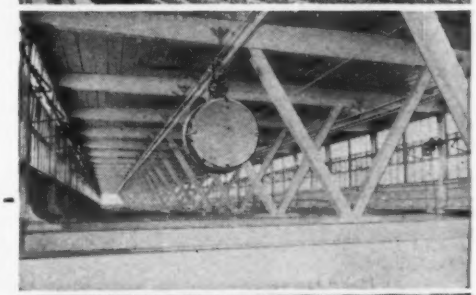
OVER TWISTERS

A swirling column of air circulates freely through twister creels to eliminate breakage due to line accumulation. Low head-room blower units overcome unusual ceiling conditions over high creels.



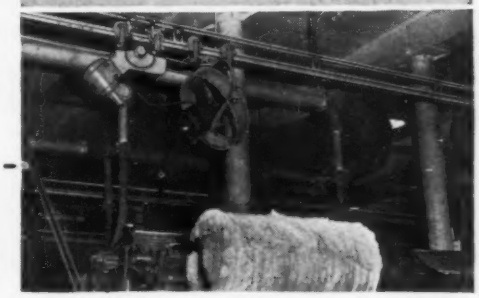
IN MONITORS

A propeller type fan distributes high velocity air currents across all structural members within the monitor. This replaces hand cleaning, breaks up air pockets and keeps the humidity evenly distributed over the work below.



OVER CARDS

Card room ceilings are notoriously hard to keep clean. A high velocity column of air from a travelling fan directed against the ceiling prevents accumulation of fly on ceiling equipment thereby eliminating the cost of hand cleaning as well as lost card production.



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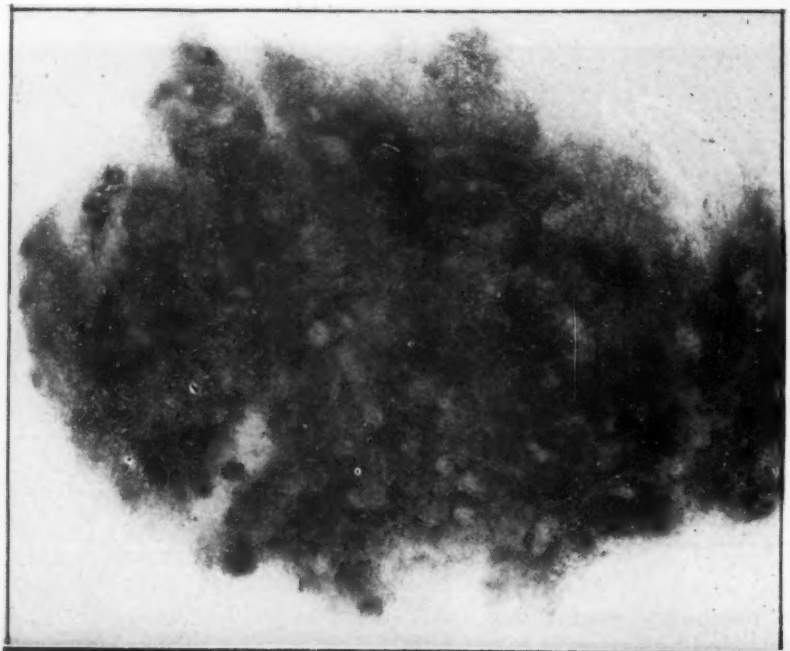
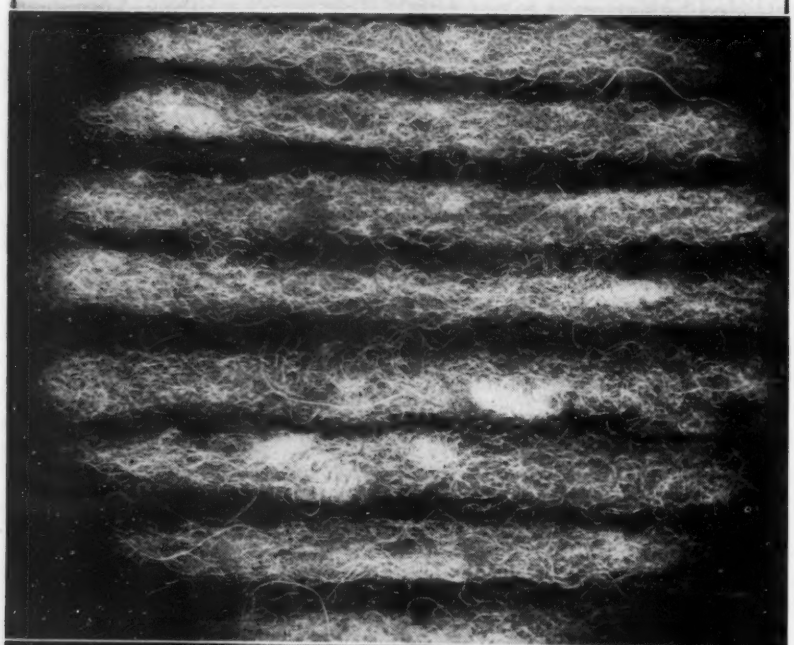
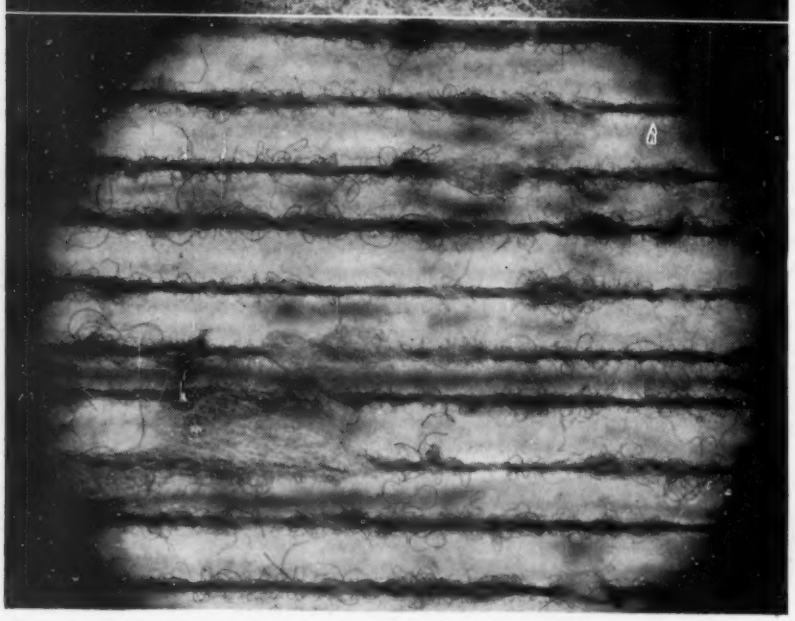






In photo at left is a blend of 50% shoddy (reworked wool), 20% Bradford noils, and 30% California wool, with 20% of nubs added at the third picker. In center photo, is shown a magnified view of roving made from the blend shown above. Weight is 60-62 grains per 20 yards of roving. Carding action is evident in this photo.

A magnified view of the nub yarn manufactured from roving shown above is presented in the lower photograph. Yarn is 2 run, 10 turns per inch (Z), made with a 30% spinning draft. It will be observed when the yarn shown here is compared with that shown in the photo in Part 1 (August issue), that this yarn is not as even due to the presence of the high percentage of shoddy in the blend.

"rub" as many carders call it. These tension rolls are moved up or down accordingly until the correct roving consistency is attained.

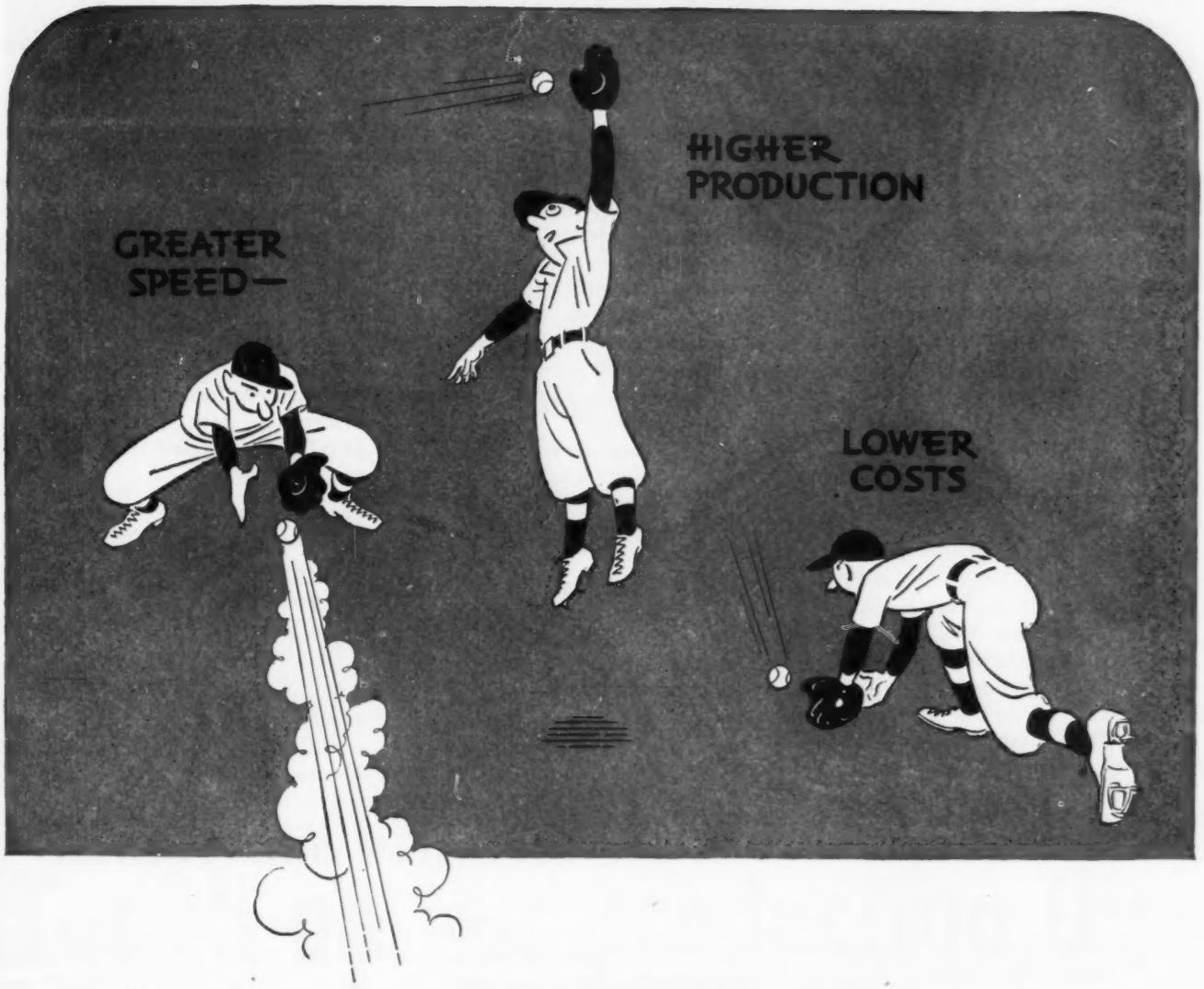
5. Table of Tape Widths. The tape condenser carries tapes of varying widths in order to be capable of processing roving of different weights. It is readily seen that tapes of certain widths can only carry a maximum amount of fibers, and if too much of a load is placed on them the resultant roving will be uneven and unworkable. For medium and fine yarns, narrow tapes and a large number per card are used; for coarse yarns, wider and fewer tapes are used. A typical mill carding room tape plan is shown in Table II. This covers a range from approximately one run to 6½ run.

Production Information

Production on a card is always a questionable problem. This fact is dependent on numerous variables such as roving weight, character of the fibers in the mixture, trueness of the card, exactness of settings, ability of the mule to spin efficiently, and various other factors. In the problem under discussion the pounds per hour of stock produced on a card are subject to the standards of the predominating fiber of the mixture. Generally speaking, 25 pounds per hour would be considered a safe center point.

Stripping Interval. With reference to the stripping interval, there are a great many influential factors; but conclusive evidence indicates that even with extreme conditions, the card should be stripped at intervals of from every 25 to 30 hours.

Drafting. In spinning, draft must



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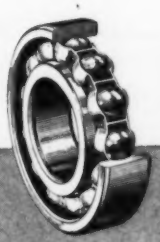

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always be ascertained according to the structural composition of the yarn and its ability to withstand the longitudinal displacement of the fibers without undue strain. Whereas in worsted and cotton spinning the drafts in most cases are above 10, in woolen mule spinning rarely does it reach a draft of 2. Speaking of draft in terms of percentage is the accepted phraseology in woolen mills since in the majority of cases it is generally within the vicinity of 35%.

Inasmuch as the drafting system is not based on a difference in circumferential roll speeds but rather on the delivery of a specified amount of roving with subsequent drafting out or "stretching" of this length by the mule carriage as it recedes towards the end of its draw, the calculation of this draft percentage is relatively easy. For example: If the carriage draw is 68 inches and the total specified roving length delivered is 34 inches, the draft percentage is then calculated to be 50%—a rare percentage even for the highest quality yarns. The selection of this draft percentage is of paramount importance in connection with nub yarn, because its behavior is far from that of the ordinary woolen yarn. This is obvious since it is necessary to support the nubs during drafting and spinning. It can be easily understood then when it is said that for this novelty yarn a maximum draft of between 30% and 35% is used.

In order not to pull the roving apart while it is being delivered by the mule delivery rolls, the carriage should never, under any circumstances, "lead" the roving away from the delivery rolls—that is, travel away from the delivery rolls faster than the roving is being delivered. If the roving is not carefully controlled it will wrap itself around the spindle tops and cause short pieces to be neither drafted nor twisted, resulting in weak places in the yarn.

Whenever a mule is put into operation on a new lot, it is wise to devote ample time and study to the question of its drafting behavior, with special emphasis on the carriage speed relative to delivery roll rate, the condenser drum roll speed relative to delivery roll rate, and the drafting percentage.

Atmospheric Conditions. The difficulty of maintaining idealistic atmospheric conditions is realized. Therefore, only general recommendations can be made relative to the subject.

For Carding:

Temperature ..... 75°F to 80°F
Relative Humidity 65% to 70%

For Spinning:

Temperature ..... 75°F to 80°F
Relative Humidity 55% to 65%

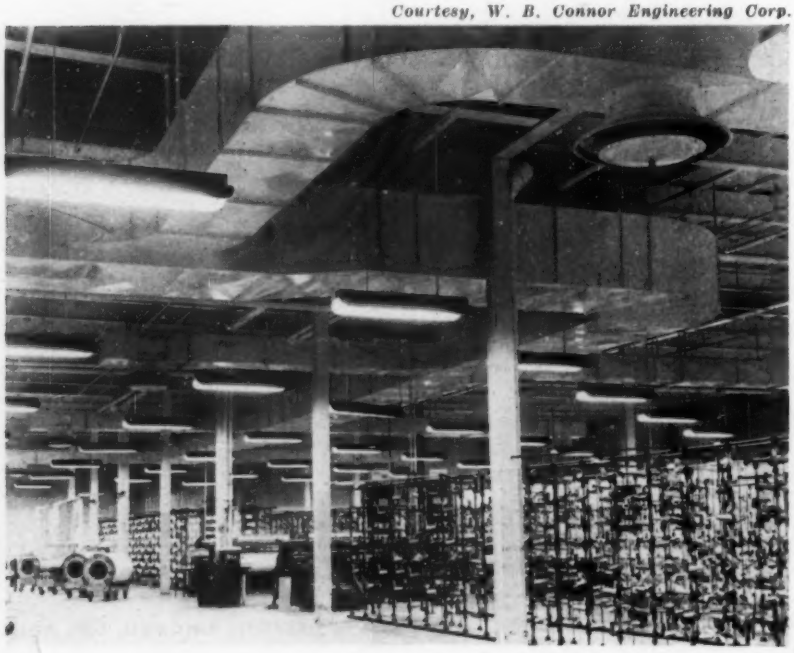
The temperature in carding is necessarily higher in order to preserve the fluidity of the oils and also to neutralize static electricity.

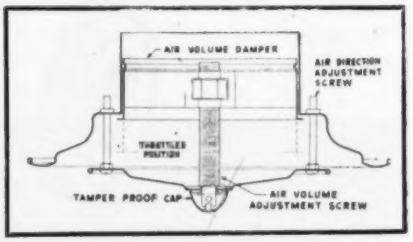
Diffuser Controls Air Direction and Volume

AIR DIFFUSERS on the distribution ducts, shown in the accompanying photo, are over the warping creel at the Front Royal, Va., plant of American Viscose Corporation. These diffusers have been adjusted for a horizontal air discharge by lowering the center element.

Ceiling air diffusers that diffuse air 360 degrees are said to supply large volumes of air through one unit and offer high outlet velocities. The diffusers pictured offer control of air direction and air volume in each unit. A cylindrical sleeve-type damper within the neck of the device regulates the air volume uniformly by opening or constricting the outlet aperture. The center element of the diffuser may be lowered or raised to provide any angle of air discharge, from vertical to horizontal.

Courtesy, W. B. Connor Engineering Corp.





Sketch showing details of construction of the air diffuser shown in photo at left installed on distribution duct over warper creel at the Front Royal, Va., plant of American Viscose Corp.

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Cotton Warp Sizing

By PAUL V. SEYDEL, D.Sc.

The Sizing Process

(Continued*)

Article 11

THE IMPORTANCE of having highly competent personnel in the slasher room is often underestimated. Too often is the slasher room looked upon as a dirty and unpleasant job, to which employees that have no particular talents in other directions are sent. Where carelessness in choice of slasher room personnel has been going on for years, there is no basis of comparison to show how much better the mill as a whole would operate with competent personnel in this position.

The Slasher Operator. It must be remembered that in the slasher room one man handles on his slasher the yarns that have been produced by combined efforts of warpers and winders, yarns that will be used in one or two hundred looms. A lot of time and money has been invested in making these yarns the best for their purpose, and the production of many looms is dependent on proper sizing. At twenty to sixty yards per minute on the slasher, it does not take a mistake long to ruin a lot of warp yarn. And re-sizing is not nearly as easy as re-finishing.

Sizing is a technical operation requiring more initiative and common sense in its operation than do most of the other more mechanical processes in the mill. Farrow, the British sizing expert, even goes so far as to say, "A purely mechanical management of sizing is as yet unattainable, and the most important result of recent investigations is to reaffirm the vital need for regularity of practice. This is in fact so necessary that it is well worthwhile for any firm to engage a scientific man capable of critical appreciation of the simple but essential physical factors involved, to act as manager of their sizing department. . . ."

The sizing operator should be capable of an understanding of technical processes, and should be neat, clean, and careful in his work. He should preferably be a man who has had experience in other parts of the mill, particularly in the weave room, so that he can fully appreciate the importance of the work he is doing.

Mechanical aptitude is useful in the proper care of the slasher, not so much in order that the operator be able to work on the machine himself, but in order that he be able to recognize quickly any troubles that may crop up, and that he may be able to suggest means for improving its operation when it is not running properly.

The slasher room itself should be carefully designed for efficient operation and pleasant working conditions to attract more competent personnel for this task as well as for the other improvements in production that will result.

The slasher room operator should have sufficient initiative to watch the size and size conditions and not rely completely on mechanical controls—mechanical gadgets can get out of adjustment, as anyone who works with them continually has learned.

Creeling and Changing Sets. Whether the section beams are creeled by the "over and under" system, or by taking the ends overhead with tension devices is often a case of individual preference. Either way is satisfactory. It has been said that the overhead system gives the best results where beam heads have been warped, causing high and low selvages.

To minimize waste on changing sets, the following method of starting the warp sheet is recommended:

With one slasher man on each side of the creel, take the two sets of ends formed on the warper on the back beam, and pull out just far enough to reach the second beam. Turn the second beam so that its tucked-in ends are close to the back beam, and tuck in the ends from the back beam with those from the second beam. Now turn both beams by hand about a half-turn, or enough to bring the ends close to the third beam. Take out the tucked-in ends, pull just far enough to reach the third beam, and tuck in again on the third beam along with the ends from the third beam. Continue as before.

This description may be a bit difficult to visualize without a creel before you, but the actual operation is simple. It has the advantage that the yarns spread themselves out rapidly into a uniform sheet, so that by the time the yarns are through the squeeze rolls, the main part of the sheet is already uniform. It takes a bit more care and work than the more happy-go lucky method of pulling off a few yards into a ball and winding a few yards of ends from each beam around the ball as the warp is carried forward. But the saving in waste is worth the work.

The new set is tied to the old set by six or eight knots across the warp. Raise the immersion roll and squeeze rolls until the knots have been drawn past, then lower the squeeze rolls, leaving the im mersion roll up. This will size the

*Dr. Seydel's discussion of the sizing process started with Article 10 which appeared in the August issue.

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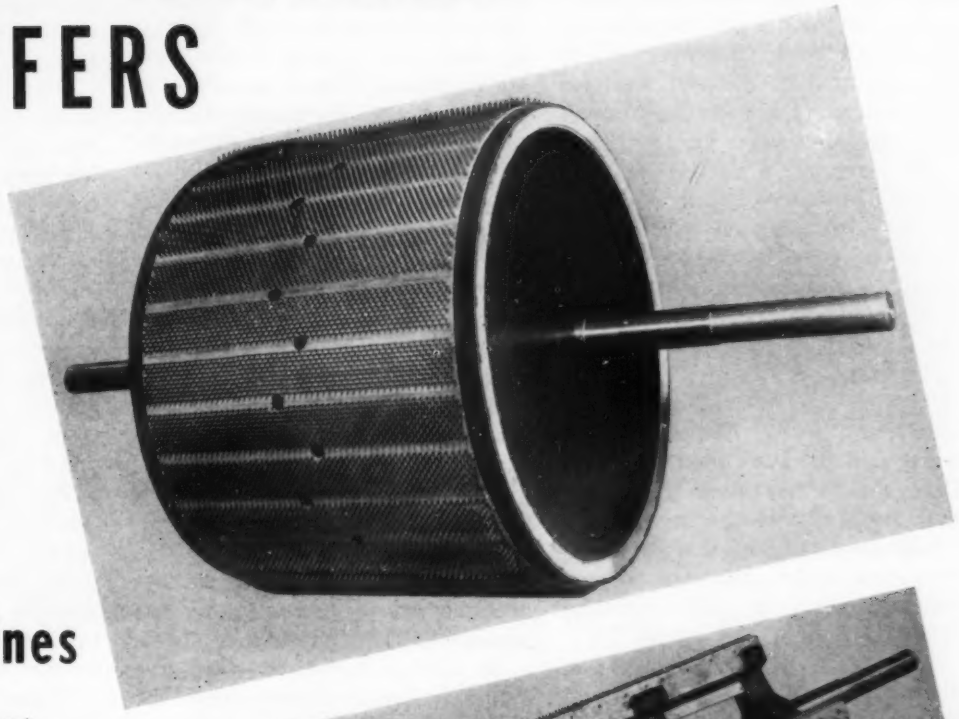

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just sufficiently to make counting-in easier.

When the warp sheet has become uniform at the front of the slasher, raise the expansion comb and expand it as much as possible for counting in. Counting-in is easier to do properly when starting in the middle and working toward both sides. However, this is not practical on pattern warps—with patterns the counting-in must be started from the side.

On completion of counting in the immersion roll is lowered.

Leasing. Laying the lease strings across the warp at the back of the slasher is simplified if a stick with a notch in one end is used to put the lease strings across. The strings (either twine or waste warp) are simply folded over the notch, the whole laid across the warp, and the stick then removed. Care should be taken in leasing that the ends of the strings are folded over onto the warp just before running into the size, to prevent tangling in the machine parts.

The lease strings should be about 18 to 24 inches apart, and the slasher moved up for each one each time the split rod is inserted, in order to prevent heavy roller marks on the warp.

The problem of when or how often to run a lease is best answered by the experience of the individual mill. A lease should, of course, be run when obviously needed due to break-outs or loose ends, but at a minimum of every other loom beam. The need will be determined by the quality of the cotton, the spinning, the yarn count, construction, etc.

The slasher operator should be responsible for watching his running closely to tell when leasing is needed. Unless the yarn is weak and has many breaks, requiring leasing to prevent an excessive number of crossed ends, leasing should not be done in the middle of the loom beam. Every unnecessary slowing of the slasher produces unnecessary variations in the size coating, and generally gives a few yards of overdried or baked yarns, which will weave badly. Lease should be made just short of the point where the warp will be cut when doffing.

Slasher Speed. The desire to run the slasher at the highest possible speed to obtain production must be balanced by the need for obtaining proper drying. In order to dry yarns rapidly, high temperatures would be required, and the yarn will be heated too much at the points of contact with the drying cylinders, giving a local baking condition. (There is, of course, no objection to increasing slashing speeds by addition of cylinders, giving more drying surface.)

Drying time is the limiting factor on slasher speed, and as soon as it is determined how rapidly a set may be run to obtain proper drying, the speed should be held as nearly uniform as possible in order to get uniform sizing. Experiments made by the Shirley Textile Institute, among others, show that the amount of size picked up by the yarn increases with increase in slasher speeds, all other things being constant. This is probably because there is less dressing off of the warp by the squeeze rolls at the higher speed.

To have a well-sized warp, the cylinder temperature should be maintained within a top temperature limit of about 230° F. For exceptionally heavy sets and heavy counts, this temperature may be increased to enable the slasher to run at reasonable speeds. However, with finer counts it is more important that the size film be in good condition, and not be baked till brittle.

Steam pressure should not be relied on to give an indication of the heat, since the temperature at any pressure may vary according to the "wetness" or superheat of the steam.

Within the temperature limits, the slasher should be run as rapidly as possible to get drying that will leave between 7% and 8% of moisture in the yarn .

Washing Down of Slasher Blankets. At the end of a day's run, the size box should be emptied and the slasher blankets hosed thoroughly to clean off all the size, so that the size will not harden on them. The practice of washing down the blankets while running is bad, for it not only dilutes the size, but also the addition of cold water to the size will cause some jelling. In addition, the cooling off of the rolls will also cause uneven sizing.

However, if it becomes necessary to stop the slasher in the middle of a set for any length of time, the rolls must be washed, using as little water as possible, to prevent the size from setting in the blankets.

Handling of Selvages. Where the selvage yarns are of the same, or practically the same weight as the yarns in the body of the warp, they require no special handling. Plied selvages are best run under the finishing roll alone, or they may be left unsized. If left unsized, heating of this comparatively dry yarn will produce no ill effects, since there is no size film, and the yarns will come to equilibrium with the other yarns after winding on the loom beam.

The yarns may be run from bobbins or cheeses supported on bobbin creels at the back of the slasher, through porcelain eyes, to join the warp sheet after it passes through the squeeze rolls, as it reaches the drying cylinder.

Where selvage yarns are heavier than the other warp yarns, but not plied, and it is desired to partially size them, they may be most advantageously run from bobbins, through porcelain eyes hung from the hood over the size box, then through the finishing roll with the other yarns, or through both rolls if so desired.

Selvage yarns that are wound on section beams are more difficult to handle separately from the other yarns, for the slackening and tightening of the main body of the warp as the immersion roll is moved up or down must be allowed for to prevent kinking or breaking of the selvages. This may be taken care of by running the selvage yarns through eyes fastened to a stick or rod hung trapeze-like from the hood of the size box with wire hooks. Whenever the slasher operator wishes to raise the immersion roll, he need only take this rod loose, and lower it with one hand while raising the immersion roll with the other, thus relieving the tension on the selvages.

Occasionally a selvage will mildew, with the main body of the

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warp remaining unaffected. This is because the much heavier selvage yarns dry more slowly. Generally, any excess or lack of moisture in the selvage will equalize itself with the rest of the warp within a day or two, though in borderline humidity cases, where the warp has a high moisture content and the conditions for mildew are good, this may not be fast enough.

If trouble of this sort is experienced, it is preferable to cease sizing of the heavy selvages. Use of more heat to dry the selvages is a bad remedy, for more damage is caused to the main body of the warp by over-drying than can be balanced by the advantage obtained in having a sized selvage.

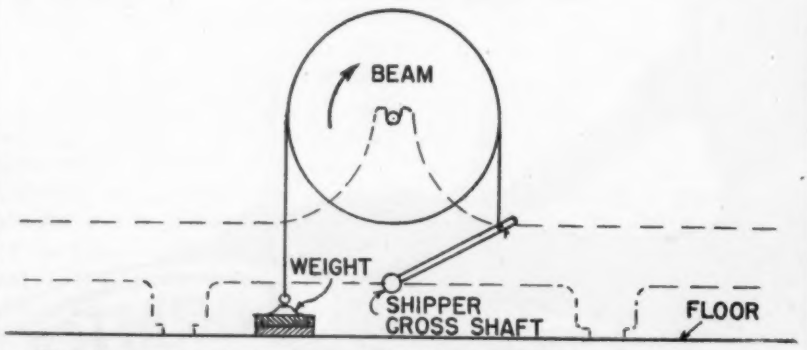
Slasher Run-outs—Tension Devices (Beam Brakes). In order to prevent the kinking of yarns that will occur on slowing down the slasher if the section beams run free, some form of braking or tension device must be used. In its simplest form, this usually consists of a rope tied at one end to an eye bolted to the floor, with a weight fastened at the other end and slung over the back beam in such a manner that the friction of the beam tends to lift the weight. (See accompanying illustration.)

This friction device will keep a tension on the back beam, and if the yarns are run over and under the other beams, will serve to stop all the beams when the slasher is stopped. Care should be taken that the rope is not slung in the other direction, for then if the rope should get caught, all the pull will be on the floor, and either the rope or the yarns will have to give way.

Instead of fastening the end of the rope to an eye-bolt in the floor, it may be fastened to the shipper bar, so that the weight rests on the floor during normal operations, and is lifted on slowing the slasher. Such a weighted rope may be hung over each of the section beams if desired, though it is not generally necessary.

There is often a tendency for the section beams to run out unevenly, leaving an excess of waste. This may be due to several causes. Where this waste is excessive, the warpers should be checked with a yardage counter to determine how much variation is occurring in each beam. Variation in tension on the section beams in the creel will contribute to the waste. Some mills have found that the back beam always runs out last, when the braking device is on the back beam, and have allowed for this by a slight decrease in the yardage on the back beam.

A simple way to guard against excessive tension on the section beams is to put large washers on the beam shafts, between the beam heads and the journals. After tightening the journals, these washers should be able to run fairly free, otherwise the journals are too tight and should be loosened slightly.



Showing one method of hanging friction weight on section beam in creel of slasher. During normal operation the beam runs free. When the slasher is slowed, the weight is lifted off the floor by the rope, which is fastened to an extension arm that is welded to the shipper cross shaft. The weight is so hung that if the rope should happen to snag, the weight will be picked up and thrown off, and the beam will not jam.

Variation in waste is usually much greater where wet beams are run. Several other methods of controlling tension and braking the beams are described under the section on equipment.

Stretch. This subject has some slight relationship to the one just discussed, for some of the stretch is put into the yarn by the tension on the warps between the section beams and the size box. However, this is only a small fraction of the stretch when operating properly, and while the yarn is cold and dry it is much more elastic and can recover this stretch. A good practical article on controlling stretch on slashers can be found in Cotton (now Textile Industries) for December 1933, p. 40, by "A. Tester."

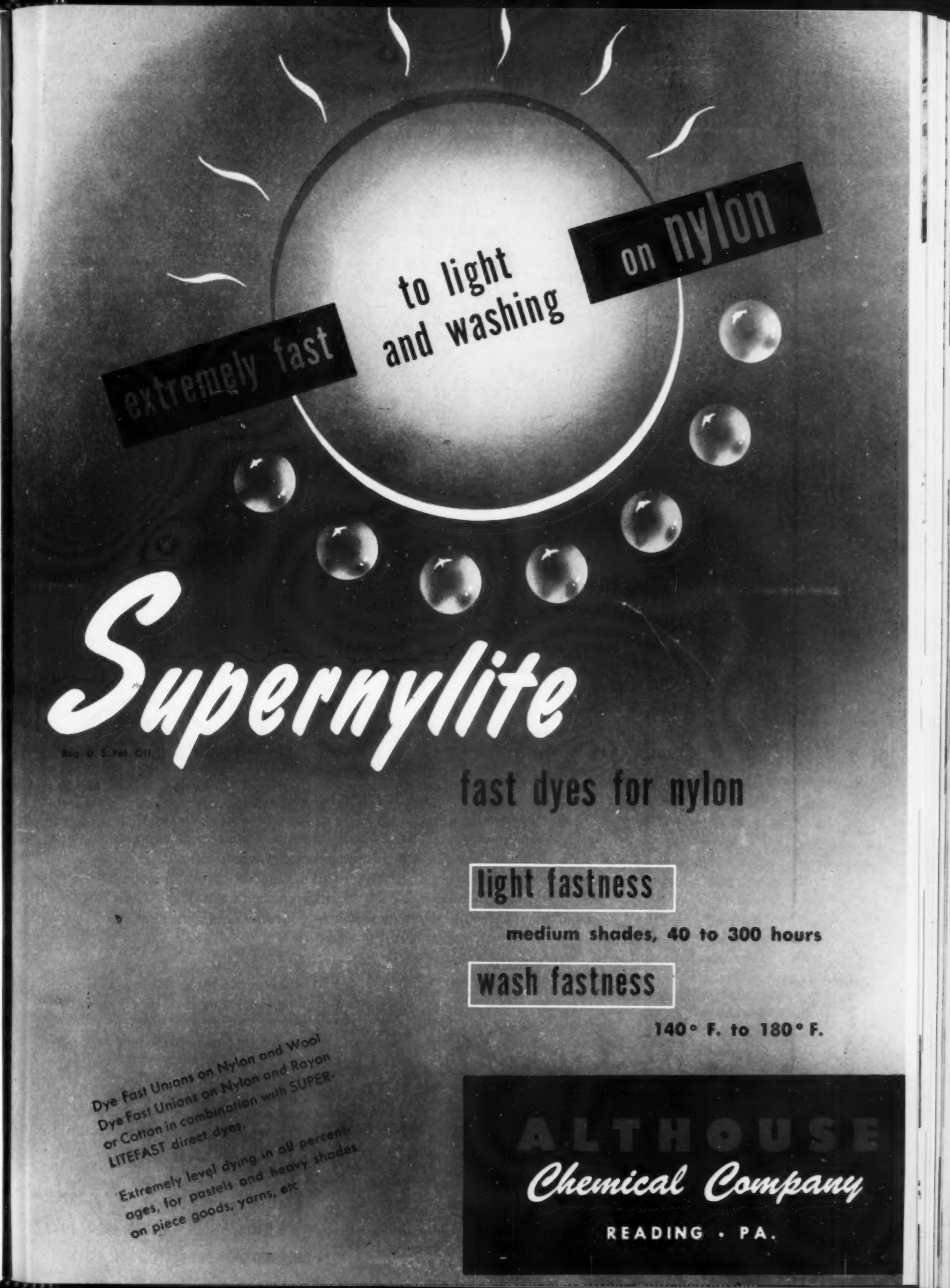
For best weaving, the stretch put on in the slasher should be the least possible consistent with operating, preferably not over 1½%. Stretch should be checked from time to time by use of yardage counters installed on the front and back of the slasher. At least one thousand yards should be measure for accurate calculations.

If excessive stretch is found, check the gearing of the slasher. With positively driven cylinders, improper gearing will show in having a very tight sheet of yarn between the size box and the cylinders.

Slippage of the yarn on the cylinders may be checked by marking the warp and cylinder together where the yarn comes on the cylinder, and noting if the marks are still together as the yarn comes off. If a change of one tooth in the gears would be too great a change, a ratchet drive can be used. When the yarn becomes too tight, the ratchet will slip and eliminate the tension.

The copper rolls in the size box must be practically the same size, with any difference in favor of a slightly larger first or back roll. If the finishing roll is larger than the back roll, the yarn will be pulled away from the back roll, giving too much stretch. Some mills have found it advantageous to have the finishing roll 1/64 of an inch smaller than the back roll.

If there is too much cloth on the drag roll, this will produce tension all the way back to the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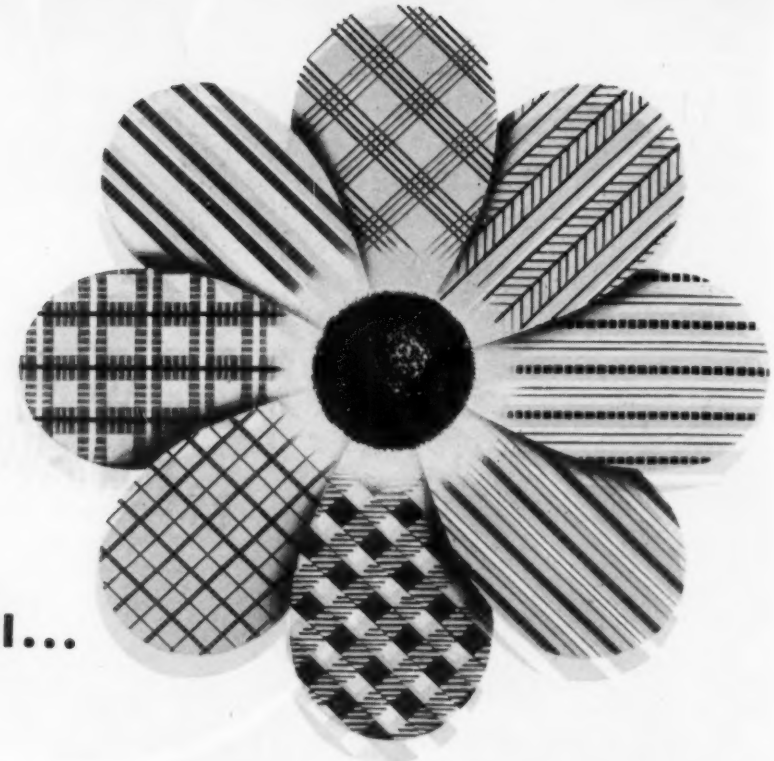

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squeeze rolls. Some of the stretch may be eliminated by taking cloth off the drag roll a layer at a time until the proper diameter is reached to give the stretch desired. There should be just enough drag so that the yarns will not slip on the drying cylinders, and so that it will split properly at the lease rods.

The amount of tension required for splitting the yarns can be greatly decreased by using a split rod between the size box and the first drying cylinder. This rod should be fitted with a rope-driven pulley so that it may be continually turned to prevent size building up on it. (Its direction of motion is not important.)

Another way of decreasing tension necessary to split warp is to use larger diameter split rods.

Cleanliness. Cleanliness is even more important in the slasher room than it is in other parts of the mill—if for no other reason than for the fact that dirt or fly falling onto the yarns will be glued to them by the size mixture.

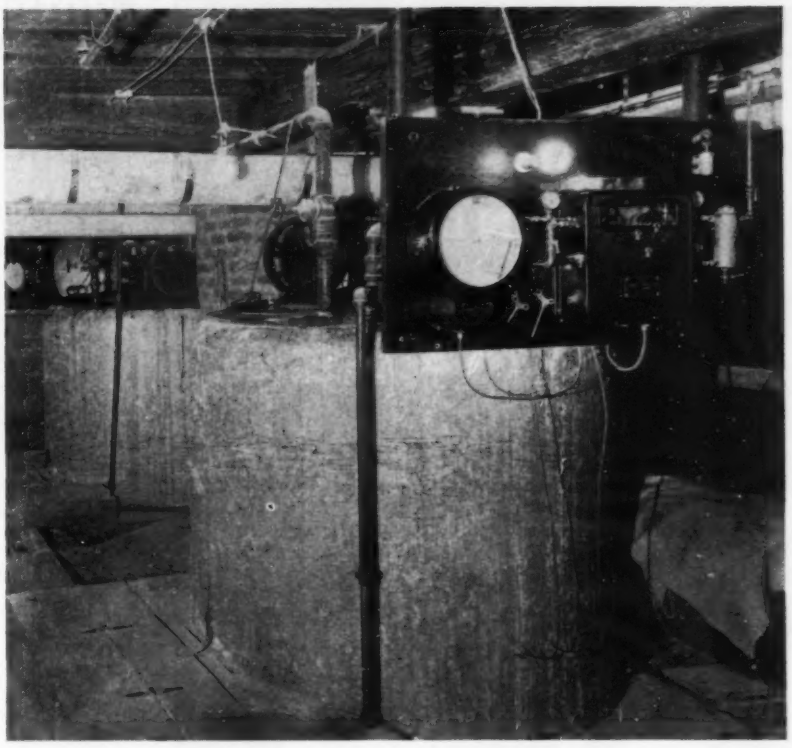
Cleaning by air blast should be avoided in the slasher room. Sweeping should be very carefully done to prevent filling the air full of dirt that might settle on the yarns as they go into the size box, or that might fall into the size box itself, or into the kettles.

The slasher room must be sufficiently well ventilated so that the steam driven off the drying warps will not condense on pipes and ceilings to drip back onto the warp with the dirt it collects. Overhead bearings should be watched to see that oil or grease does not drip onto the warp.

Between sets, any accumulation of dirt or lint on the hoods or elsewhere over the warp should be swept or wiped down. The size box must be cleaned out thoroughly at least once a day, but it will be even better if this is also cleaned out between sets.

A funnel containing a piece of screen should be suspended below the size inlet to screen out trash and size lumps. Such a strainer is easily cleaned and will help a lot in producing cleaner warps.

Slashing Wet Warps. Slashing of wet warps requires the patience of Job when it comes to paying attention to detail. All of the normal slashing troubles are present, with several more added, causing this to be one of the most difficult of sizing problems.



Much avoidable size shedding can be traced to improper cooking. Automatic cooking controls should be adequately maintained.

Undoubtedly, the best solution is not to size wet warps when it is at all possible to avoid it. Where wet warps are continually run in a mill, this can be done without an additional operation by the installation of a drying cylinder between the section beam creel and the size box, a comparatively small investment that will pay for itself in savings on headache tablets alone. The actual amount of drying obtained on this cylinder need not be nearly as accurate as that obtained on the other cylinders with the sized yarns. This yarn may be dried at a higher temperature than that used for the sized yarn, for there is no starch film to suffer damage from baking, and the cotton will be wet again immediately.

There are two big troubles ever present in sizing wet warps. First, they are so soaked with water that the size cannot penetrate sufficiently to get anchorage onto the fibers, which results in increased shedding, as well as obtaining less added size on the yarns.

Secondly, the water present in the yarns mixes somewhat with the size as the size begins to penetrate, and is then squeezed out again into the size box by the action of the squeeze rolls. The result is a much diluted size mixture, with greatly decreased efficiency.

Because of this dilution, circulating systems should never be used for sizing wet warps, for all of the size will become gradually diluted. A constant level device should be used to require as little watching as possible, and as little size as possible consistent with good slashing practice should be kept in the size box. In this way, the size in the box will be used up as rapidly as possible, and the effect of the dilution will be decreased.

With a properly operating constant level device, preferably one with a small constant flow by-pass to decrease the effect of intermittent additions, a fairly even size mixture can be kept in the box,

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and the formula of the original mix can be strengthened to allow for the dilution. After a short period at the beginning of the operation, the dilution will come to equilibrium with the size being added. Only in this way can uniform sizing be expected with wet warps.

If variation is still too great, allow a small stream of size to run continuously from the size box to the sewer. The extra material cost will be more than made up for in weave-room production.

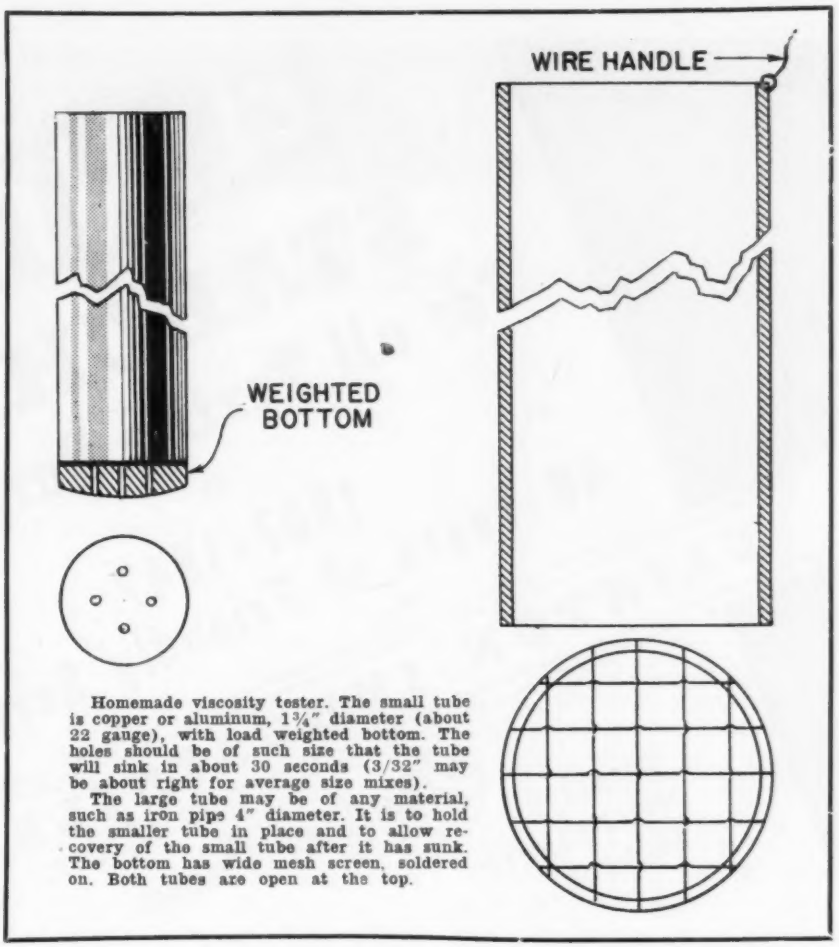
Where wet and dry warps are run through the same slasher room, different size mixes should be used for the two.

More attention must be paid to having small and even tension on the section beams with wet warps, for they will stretch much more and are less elastic than the dry warps.

Particular attention should be paid to avoidance of over-drying warps sized from wet section beams, for as brought out, the penetration of the size to a good anchorage is prevented by the presence of the water. Therefore, an overdried or baked size film on this type of warp is much more likely to shed than with the ordinary warp.

Some mills sizing wet warps have a storage section where the wet beams are kept turning 24 hours a day by means of a small motor. In this way the water is kept from settling to one side and giving a badly unbalanced beam.

Viscosity Testing. It is quite often desirable to test the viscosity of size mixtures in actual use. This is often done to check on dilution of size by wet warps, wet steam, leaky valves, etc.; or to test the action of storage or agitation on the size. The size mixtures generally in use are too thick to be tested by the capillary tubes or small orifices generally in use for viscosity testing, and the special types of apparatus designed for testing of heavy starch pastes in the laboratory are not only very expensive, but also are not suited to testing the material as it is in use. A method by which size is dipped out of the kettle or box and the time measured for it to run through an orifice has the disadvantage that the temperature cannot be kept constant.



Homemade viscosity tester. The small tube is copper or aluminum, 1¾" diameter (about 22 gauge), with load weighted bottom. The holes should be of such size that the tube will sink in about 30 seconds (3/32" may be about right for average size mixes).

The large tube may be of any material, such as iron pipe 4" diameter. It is to hold the smaller tube in place and to allow recovery of the small tube after it has sunk. The bottom has wide mesh screen, soldered on. Both tubes are open at the top.

Recently a recording viscosity meter has been put on the market. A brief report was carried in the June 1947 issue of TEXTILE INDUSTRIES (page 92-94), and much interest was indicated in this instrument by Alabama mill men. The manufacturer's announcement of the instrument was carried on page 137, May 1947 issue of TEXTILE INDUSTRIES.

A testing device devised by the author, while still far from perfect, eliminates many of the disadvantages of the usual methods. A sketch of the simple apparatus required is shown in the accompanying illustration.

The large outer tube is let down into the size box or kettle and allowed to remain for a minute or so, while it comes to the temperature of the surrounding size. It is then raised and lowered again, so that the size inside which may have been cooled slightly by the tube will be replaced by fresh hot size. The small tube is then set gently on the surface of the size, with the orifice down, and immediately released. The time required for the tube to sink is measured with a stop watch.

The size of the orifice should be such that about forty seconds are required for the tube to sink. If it is smaller, there will be too much interference by stoppage of the orifice due to small lumps or dirt present in the size. If larger, the time differences will not be sufficiently great to be accurate.

After each test, the smaller tube is washed thoroughly and dried before testing again. The average of a number of tests should be taken, and any tests which are very much slower than the average should be discarded, for they are probably the result of lumps or dirt interfering with the flow through the orifice.

This method obviously gives comparative results only, but once the normal viscosity of a freshly cooked batch has been measured, it is simple to check deterioration of the size mix or variation between batches.

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How OTHER MEN Manage

Comments on Damaged Card Clothing

Subject briefed: *Damaged card clothing. Information pertaining to the cards is as follows: Cylinder wire,* 90; *doffer and flats,* 100; 15-*oz. lap;* 65-*grain sliver, carding* 11 *pounds per hour; cylinder speed,* 165 *rpm; equipped with continuous strippers.* (CONTRIBUTOR No. 7866, *August* 1947.)

EDITOR TEXTILE INDUSTRIES:

Here are the main causes we have encountered for mashed card clothing:

1. Foreign matter such as pieces of ties, wire, wood or leather coming through in the lap.
2. Card hand allowing hard end of lap to run through.
3. End down on front allowing web to roll up and go under doffer bonnet.
4. Card hand allowing cleaning waste to be caught between doffer and bonnet.
5. Burr on comb accumulating a choke that gets between doffer and bonnet.
6. Broken comb band allowing doffer to run without being combed until the web jams between the comb and doffer.
7. Lumps of cotton saturated with oil being jerked under the feed roll whole and jammed between the licker-in and cylinder. The oil is also harmful to the clothing base. These lumps are formed in the breaker beater section of the picker by cotton sticking under the oil feed bar, becoming matted with oil, then breaking loose in lumps and coming through in the finished lap.

Buckling and slack places in card clothing are usually traceable to one or more of the following causes in our card rooms:

1. Chokes between the frame and cylinder loosening the pegs holding the clothing on the edges of the cylinder.
2. Improperly drawn clothing (insufficient tension).
3. Clothing with inferior base.
4. Improperly pegged clothing.
5. Clothing with numerous mashed places will tend to get slack.

All the above causes have been encountered over a period of years on 400 cards, some running white and others running colored stock.

Two years ago we equipped 75 cards with continuous strippers. Colored stock, Middling 7/8"-1" staple is processed on them. Other information pertaining to these cards is as follows: Cylinder wire, 100; doffer and flat wire, 110; 15.42-oz. lap making 67-grain card sliver; 16.4 pounds per hour production; cylinder speed, 181 rpm; and continuous stripper speed 1910 rpm.

Our only trouble, so far, originated with the stripper driving bands running slack. The surface speed of the stripper fell below the surface speed of the cylinder (recommended ratio — 1.00 for cylinder and 1.25 for the stripper) and caused the stripper to load up. This, in turn, caused the cylinder to load up and in some instances the cylinder wire was damaged.

Here is the grinding, stripping and setting schedule which has practically eliminated this trouble. Our grinding cycle is 18 days. The grinder performs the following steps on the continuous stripper each time the card is ground:

Removes the continuous stripper and sets the roll according to the instructions given by Saco-Lowell.

Checks the stripping combs for bent, burred or otherwise damaged teeth and sees that damaged parts are replaced.

Checks driving bands for wear and for proper tension.

Sets top and bottom back plates to .029 inches.

In addition, the grinder keeps a constant watch for slack stripper driving bands and tightens loose ones immediately.

The cards are stripped once a week with a roller.

CONTRIBUTOR No. 7881

(*Discussion continued on page* 125)

ATTENTION!!!

Kink or Short-Cut Contest Ends September 30

AS ANNOUNCED in the August 1947 issue, $100.00 will be awarded the contributor who furnishes the most helpful kink, short-cut, time-saving device, cost-cutting suggestion, or quality improvement idea by September 30. The contest may be entered by any reader of this magazine, but the kink must not have been published elsewhere.

In sending in ideas, give complete description and where possible accompany description by sketch. Finished drawings are unnecessary. Participants are not restricted as to the number of kinks submitted during the contest.

Only one award will be made, but non-winning contributions will be paid for at regular space rates if used. Advise in original correspondence if participant's name may be used, or if contributor number is preferred.

All entries must be postmarked not later than midnight of September 30. Address: Editor "Textile Industries," 1020 Grant Building, Atlanta, Ga.

If you were tardy in entering this contest, watch for the next one—to be announced shortly.

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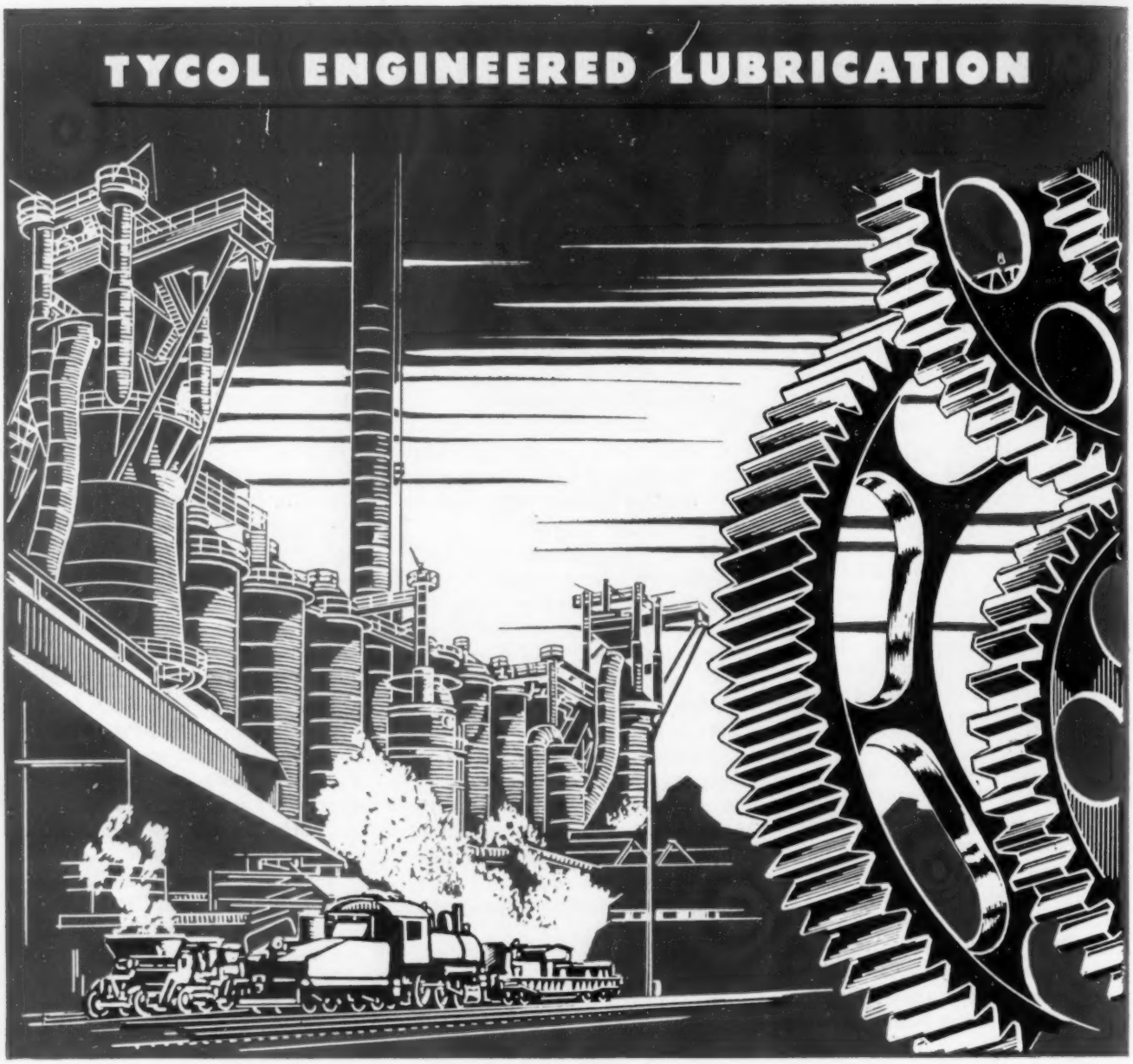

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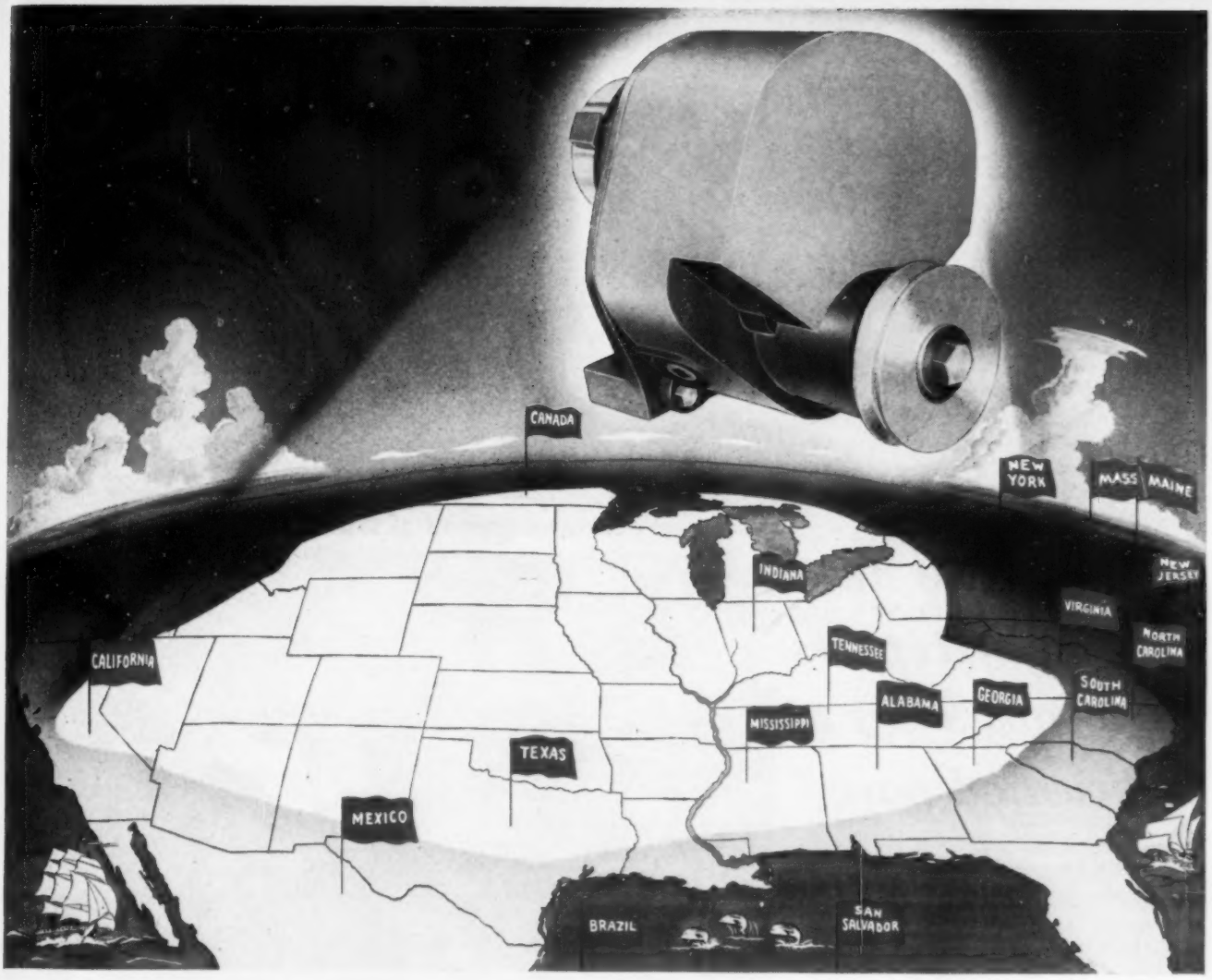

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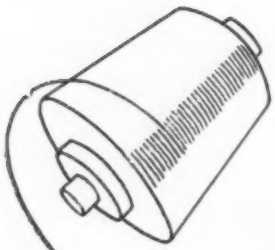
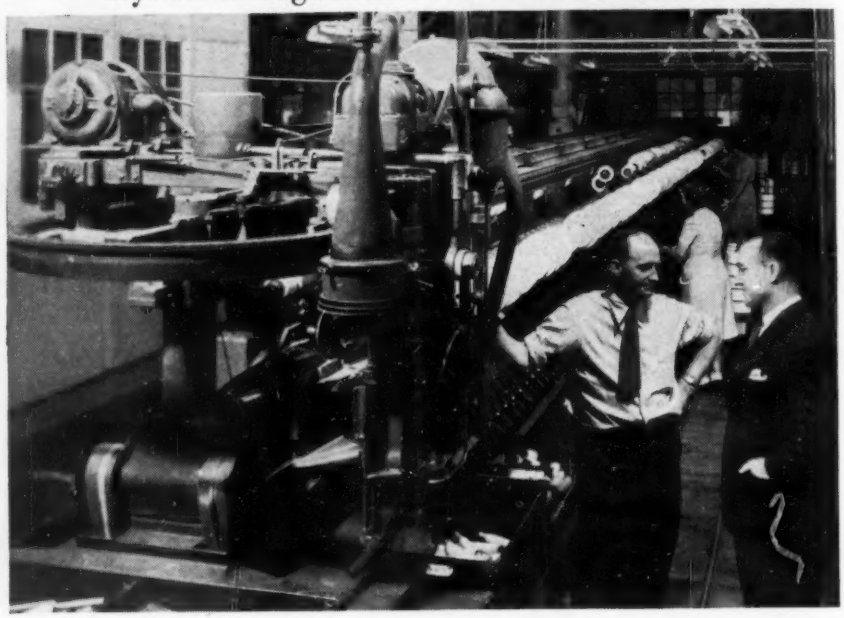


says the management of this modern weave mill

"...no need for repairs of any kind to lubricated parts"



The Gulf Lubrication Engineer "in the picture" (right) is checking spooler lubrication in this prominent southern mill.

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GULF INDUSTRIAL LUBRICATION

EDITOR TEXTILE INDUSTRIES:

CONTRIBUTOR No. 7866 is having trouble with card clothing jamming, flying up (buckling), having slack places and getting mashed, and believes it may be caused by the continuous stripper.

This is calling the roll of card clothing complaints in a hundred mills. If the clothing is jammed and has slack places, it is obvious that someone has given it rough treatment, probably allowing the stripper roll to bang into the wire, a bunchy tailing of a lap to go through or maybe a cleaning mop is caught in the cylinder. Anyone of these three evils in turn will cause the next evil: buckling or slack places. When this happens, then you had better have the clothing redrawn (if it will stand it), as you can never properly grind wire that is slack or pushed back; to say nothing of the bad work resulting from this condition.

I am not saying that the evils mentioned above are the only causes of damaged or bad clothing; all clothing should be redrawn, or drawn on twice. This practically eliminates the danger of future stretching and slack clothing, assuming, of course, that the clothing gets no undue punishment from careless card tenders and grinders. Too close setting of the flats, doffer to cylinder, and other points will cause the cylinder wire to "fly up"—this means that the wire has been pushed back, and at the same time "faced."

If a fillet is properly applied by a card clother who knows his job and there are no "faults" in the clothing itself, that fillet should stay put and do good carding for 20 years on one shift, and 10 years on two and three shifts—with proper handling by the operatives.

Unfortunately, finished card clothers and grinders seem to be fast disappearing from the scene.

When a card is reclothed, either with new clothing or old clothing redrawn, the bare cylinder should be surface ground with an emery grinder built for this purpose.

I am presuming that our friend is producing coarse yarns, or reasonably so. His production and the other specifications sound all right.

I note that he is using the continuous card stripper. Some will tell him that this stripper will injure the clothing. In 15 years of my observation of this stripper, no one has proven this point to me. I can name a mill that ran a card one year without grinding and still produced a good looking sliver—this card was equipped with the continuous stripper.

CONTRIBUTOR No. 7875

◆

EDITOR TEXTILE INDUSTRIES:

There is insufficient information to come to a definite conclusion as to the cause of the trouble described by CONTRIBUTOR No. 7866.

From our experience with something over 1200 continuous strippers, we would say that the continuous stripper does not damage the clothing if properly set and kept up to speed. Should the stripper damage the clothing, the appearance of the clothing would be somewhat similar to clothing damaged by the old style roll stripper.

From the wording of the question, it would appear that what is causing trouble is incorrect settings on the card as well as chokes on the ends of laps.

CONTRIBUTOR No. 7874

Improvised Drive for Drawing

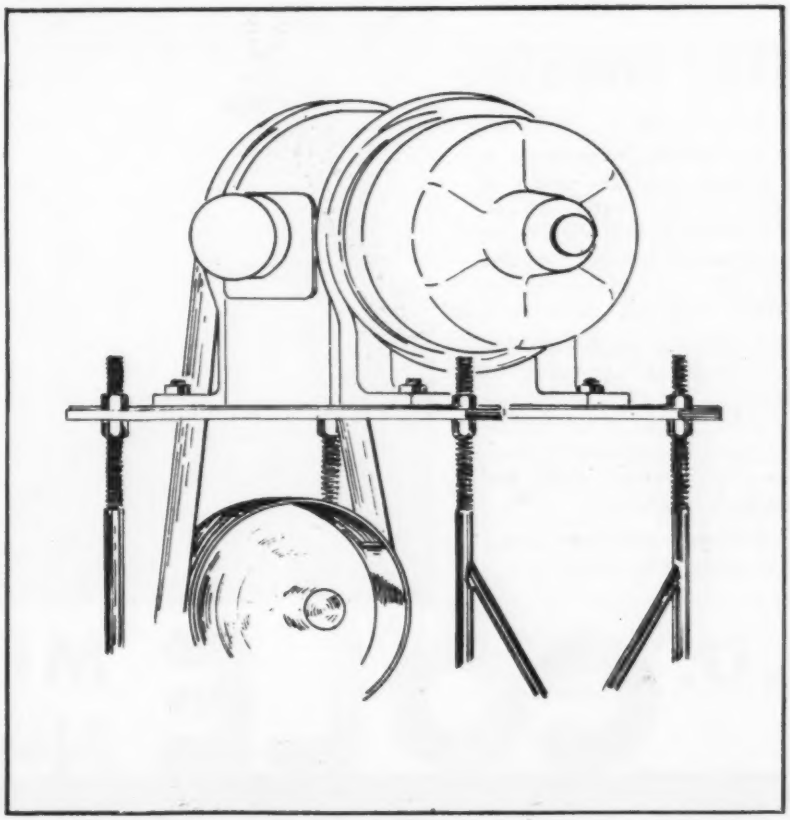
EDITOR TEXTILE INDUSTRIES:

I would like to suggest to your readers a method of driving drawing frames, which we believe to be more satisfactory than the method in which the driving pulley is located on a shaft in the center of the frame.

This method consists of mounting a V-belt type pulley on the end of the frame and driving it with an electric motor which is mounted on an adjustable base, as illustrated in the accompanying sketch. With the adjustable type of base, which incidentally can be made in any machine shop, it is possible to compensate for belts that are too slack or too tight.

We use a 5 hp motor to drive a frame with 18 deliveries.

CONTRIBUTOR No. 7863



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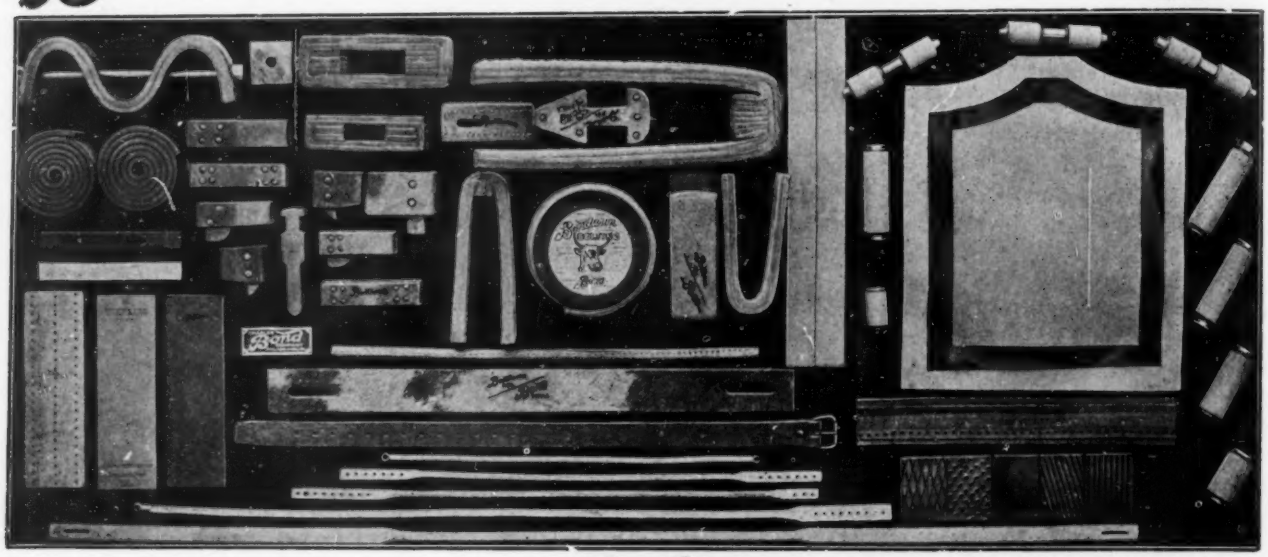

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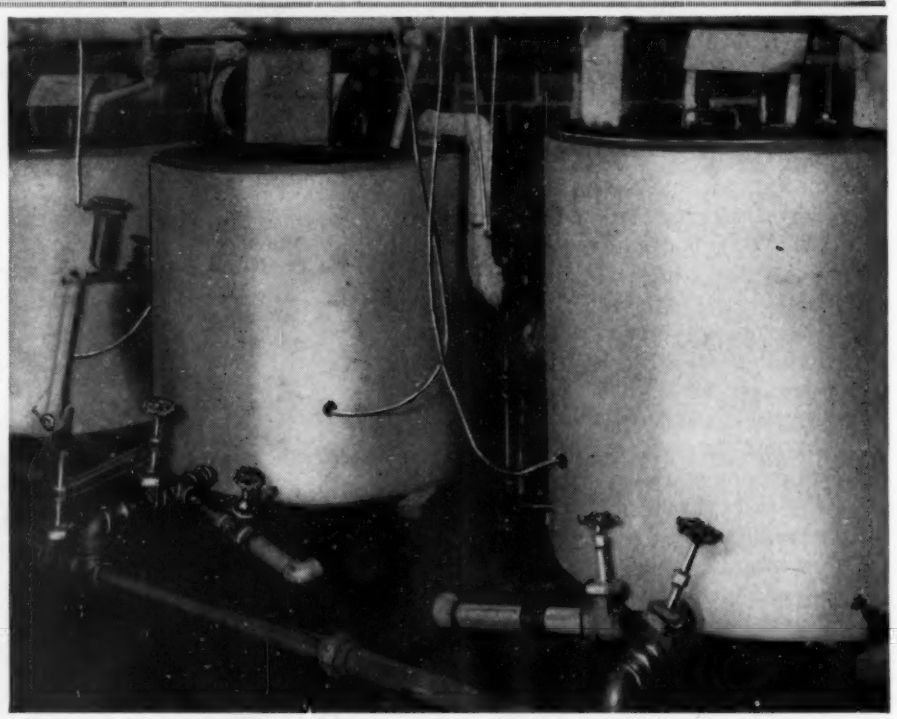

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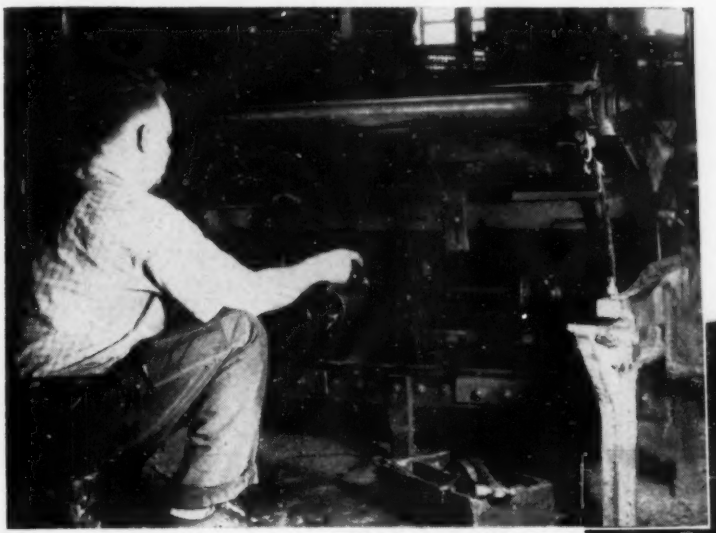
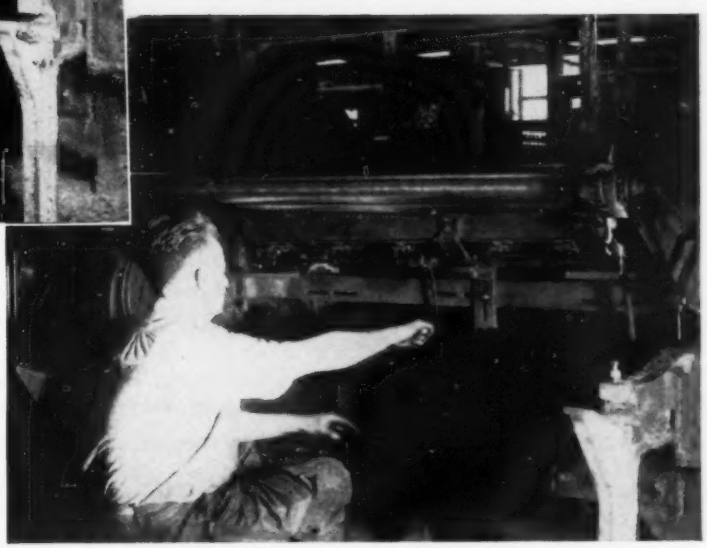
Fotohints (No. 5)

Looking Ahead

Someone has said that FOREsight is better than HINDsight. Be that as it may, this loom fixer knows that by carefully inspecting, tightening, and lubricating his looms while the warps are out, the chances are that there will be very few flags up while the warp is running, thus reducing his work and increasing production.



Left, loom fixer oiling hard-to-get-to places while the warp is out so that he can see where the oil is going.



Right, loom fixer tightening cam on a Draper loom while the warp is out.

Slack Lapping of Cloth

EDITOR TEXTILE INDUSTRIES:

One of the difficulties facing weavers at times is that of cloth wrapping too slackly on the loom cloth roller. This may be a general fault across the entire surface of the roller or may be at one end only, causing the cloth to telescope or wrap in spiral formation.

In the first case one remedy which may prove successful is to tack a spare piece of cloth tightly around the roller. This may provide the required rough surface to enable lapping to take place effectively.

All screws and brackets in connection with the cloth levers should be examined to see that the brackets are equal in height and that the levers are also equal. Any rust should be wiped out of the slots in which the levers work, and they should be kept well oiled. Slack lapping may be caused if the emery roller or sand beam requires tinning, or if the beam pivots and bushings are worn.

Telescopic wrapping of the cloth on to the cloth roller—that is, wrapping more tightly at one side than the other—may be caused by odd temple boxes or a worn pair of rollers at one side and good rollers at the other.

CONTRIBUTOR No. 7911.

AMATEUR PHOTOGRAPHERS ATTENTION!!

You too can tell a story with your camara just like this man did in the Fotohint above. It may be a hint on machinery maintenance—it may be a novel attachment applied to standard equipment—it may be a "kink," short cut, safety or human interest shot.

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Seconds Due to Clearer Waste

EDITOR TEXTILE INDUSTRIES:

I would like to hear from some cloth manufacturers as to what per cent of their seconds and other "off-goods" are in their opinion due to clearer waste, roll waste or other foreign matter from the spinning and card rooms.

CONTRIBUTOR No. 7960

(Editor's note: Prior to publication of this question, it was submitted to several mill men for comment. Their answers are presented here. Other mill men are invited to send in their opinions.)

EDITOR TEXTILE INDUSTRIES:

Although our production consists of spun rayon, blends of spun rayon and acetate, and cotton-synthetic blends, it is believed that waste reports on these materials will be beneficial to the industry.

We keep accurate records on waste and find that defects caused by foreign matter, roll waste, and clearer waste in the carding and spinning rooms amount to not more than two tenths of one per cent. This figure might seem low, but when running synthetics, you have very little clearer waste, and not much roll waste if ends are put up promptly after coming down.

The foreign matter in synthetics is negligible, and when the yarn is woven into fabrics that are later finished or dyed, you do not have to worry much about it.

One of the things that causes more seconds for us than anything else is ropy filling, which we have found in lots of cases to be due to large bobbins.

We make a considerable amount of slub yarn and find that this also causes defects when first placed on the loom after changing from regular yarn. In fact, most of our seconds are caused by failure of the slub mechanism to operate properly, size of bobbins, and looms getting adjusted to new fabrics due to constant change of styles.

Our top clearers are covered with cotton flannel and the lap sticks are covered with blue denim.

Our warp yarns range from 39s to 40s; breaking strength, 51 lbs. and 49 lbs.; yarns are carded and made of 1⅛-inch Western cotton.

CONTRIBUTOR No. 7961

◆

EDITOR TEXTILE INDUSTRIES:

It is our opinion that CONTRIBUTOR No. 7960 is not specific enough with the question regarding the amount of seconds caused by roll waste, clearer waste, and other foreign matter in the spinning and carding departments. In order to give a correct answer on the question, it is necessary to know just what type or class of fabrics is being made.

Some classes of fabrics do not have a high percentage of seconds due to the fact that some small defects are eliminated when the cloth is dyed, bleached, or finished. Some gray goods do not have to be inspected too closely with regards to small specks or spots, slubs in the yarn, etc.

We have never made a test to see what percentage of seconds are caused by roll waste, clearer waste, and other foreign matter, but even on wide sheeting and related fabrics it is believed that seconds would amount to well over one per cent.

The question brings up a good point for extensive research on waste, but I have not yet seen or heard of a mill making such a close classification of seconds.

CONTRIBUTOR No. 7962

◆

EDITOR TEXTILE INDUSTRIES:

Waste is a big question in most plants and offers a large field for research as to methods for reducing it. The less waste made, the more will be the total income for the plant.

With the exception of sweepings, most of our waste in the cardroom can be run back through again. This does not include clearer waste which is placed in separate containers for sale.

In the spinning department, all waste from lap sticks can be run back through again. This also applies to short ends from roving bobbins.

The clearer waste is placed in separate bags for sale to waste firms. This clearer waste frequently causes gouts and slubs in the yarn when it "eyebrows" over the edge due to an excessive amount collecting on the clearer.

We have ordinary cotton flannel on the underside of our clearers, which are picked twice a day on each shift.

The slubs and gouts will make seconds in a fine fabric of high quality even if the ends do not break. This is not the case with a coarse fabric. Lots of defects that would be clearly visible in a bleached fabric, are covered up in a fabric that is to be dyed.

Our waste for carding, spinning, and weaving averages around 10 to 12 per cent of the total production in pounds.

CONTRIBUTOR No. 7963

◆

EDITOR TEXTILE INDUSTRIES:

Waste in the carding department, and throughout the entire mill to a great extent, is dependent on the quality of cotton being used. The length of staple and grade will determine the amount of fly. A low grade of cotton requires more roll picking, produces more clearer waste, and requires more blowing down and additional cleaning.

We use ordinary cotton flannel top clearers on our roving and spinning frames. These are picked at least once on each shift by the frame tenders.

Cardroom cleaning produces 12-14% of waste from a fair grade of cotton, 1″ staple.

The yarns for our colored fabrics are carded, and the seconds in the weaving department caused by defects in this material do not average over 1%.

CONTRIBUTOR No. 7964

◆

EDITOR TEXTILE INDUSTRIES:

It is safe to say that one-half of one per cent will cover the amount of seconds caused by roll waste, clearer waste, and other foreign matter in the card and spinning rooms when referring to fabrics of average quality.

During the past quarter this plant processed 234,308 lbs. of fin-

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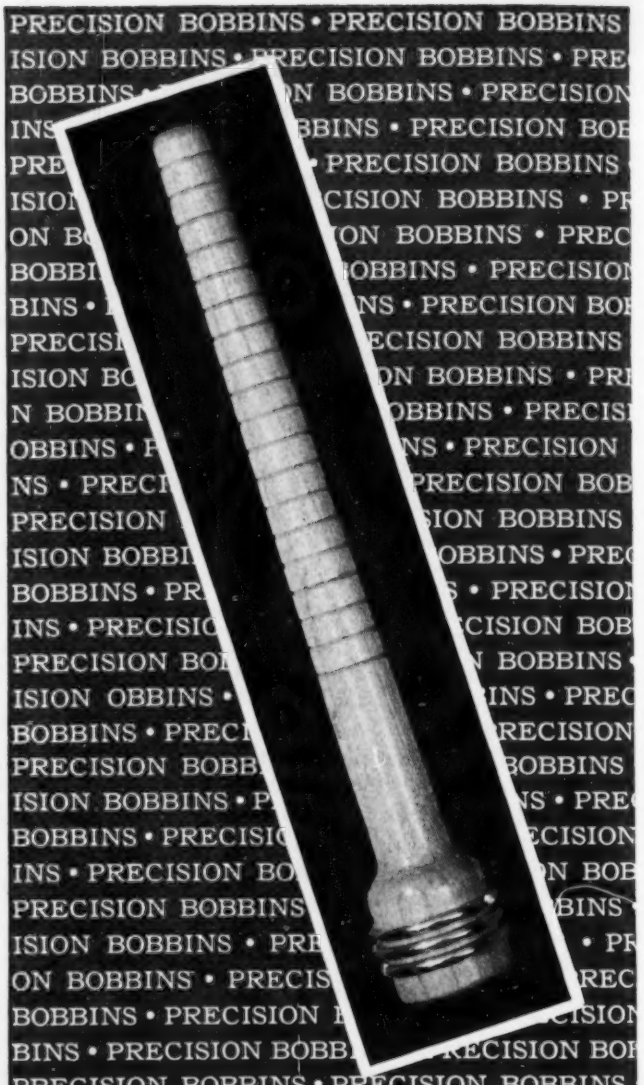

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ished goods, having a percentage of .0205 clearer waste. No figures are kept on roll waste because it is run back through with good stock. Motes for the year of 1946 amounted to 2.455%.

Due to the fact that we do not sell yarn, no figures are kept as to the number of defects per thousand yards of yarn.

CONTRIBUTOR No. 7965

Combination Beam and Harness Truck

EDITOR TEXTILE INDUSTRIES:

Ours is the open-house type textile plant and we are glad to pass on an idea for a combined beam and harness pattern truck that might be helpful to some other textile mill where the slasher and tie-in departments are on one floor and the weave-room on another.

With the slashers and tie-in machines on the third floor (adjoining the spinning room) and the weave room on the first floor in a large plant, it is not feasible for loom fixers to carry each loom beam and harness pattern up on the elevator after cutting out a warp.

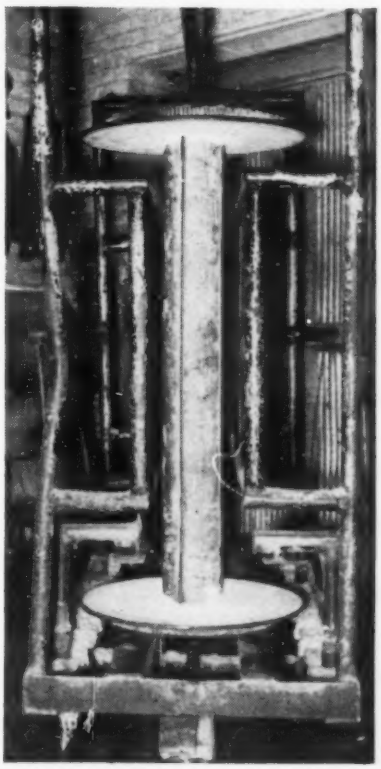
In order to eliminate this difficulty, we have designed an all-metal combination beam and harness truck that is used to carry both to the slasher and tie-in departments at the same time.

This truck has the conventional roller or ball bearing wheels, a center section for loom beams, and receptacles on each side for the harness patterns. The loom beams are loaded from the end by sliding them into the space provided in the center. The harness patterns are put on the truck from the side.

An empty truck is always kept at the elevator and loom fixers have no difficulty in putting the beams and patterns on it. The elevator operator can easily push the truck into the slashing department.

We believe in making substantial trucks, so an iron base is used for the bottom and welded pipe for the sides and ends, providing a truck that will last indefinitely without maintenance except oiling the wheel bearings.

CONTRIBUTOR No. 7917.



One vs Two Flange Ring

Question briefed: *Which is better for spinning 30s and 40s yarn—a one or two flange ring?* (CONTRIBUTOR No. 7966, *August*, 1947.)

EDITOR TEXTILE INDUSTRIES:

We use the double flange rings on 30-40s yarn. We make combed yarn for high-grade fabrics. When we turn the rings, we score the old side so that it cannot be turned up and used again.

CONTRIBUTOR No. 7967

EDITOR TEXTILE INDUSTRIES:

We run a single flange ring on 28s carded yarn. You do not need a heavy flange ring on fine yarn. Coarse yarn requires a heavy flange ring and traveler.

We are running 14s to 3.5s yarn with a double flange ring. If CONTRIBUTOR No. 7966 is making print cloth and sheeting, I would recommend that he use a single flange ring on his 30s and 40s yarn.

CONTRIBUTOR No. 7968

◆

EDITOR TEXTILE INDUSTRIES:

If CONTRIBUTOR No. 7966 is running carded yarns, we would recommend that he use a single flange ring for 30s and 40s yarn. A double flange ring is too heavy for fine carded yarn.

We use a two flange ring for numbers below 30 and single flange rings for numbers 30 and up. Of course, this is all carded yarn which is not as strong as combed yarn.

CONTRIBUTOR No. 7969

◆

EDITOR TEXTILE INDUSTRIES:

We recently changed from 1¾" double flange rings to 1 13/16" single flange rings in order to use the same holder. We get a little better work as a result of this change.

We have less travelers coming off with the single flange ring than was the case with double flange rings.

Our yarn is made of cotton and synthetic material, ranging up to 40s carded.

CONTRIBUTOR No. 7970

◆

EDITOR TEXTILE INDUSTRIES:

We use a double flange ring for spinning 30s and 40s yarn, but our case might not be the same as that of CONTRIBUTOR No. 7966. Ours is combed yarn of high quality for tire cord.

Carded yarns of this type would probably be better handled with a single flange ring.

CONTRIBUTOR No. 7971

◆

EDITOR TEXTILE INDUSTRIES:

It is my opinion that a ring with one flange is best for spinning 30s and 40s yarn due to the fact that it is lighter than a double flange ring. Carded yarn this fine

does not require the use of double flange rings.

We have close to 300,000 spindles on counts within the range cited by CONTRIBUTOR No. 7966, and we use the single flange ring on 30s and 40s carded yarn, obtaining full satisfaction from this practice.

CONTRIBUTOR No. 7972

◆

EDITOR TEXTILE INDUSTRIES:

We run 30s yarn regularly on a two flange ring. However, this is combed yarn, which is much stronger than carded yarn. We do not run yarn finer than 36s on a double flanged ring.

We are getting good results at present by running 36s on a double flanged ring, and have spun 40s on this ring. However, all of ours is combed yarn.

CONTRIBUTOR No. 7973

Lumpy Sliver at Comber

EDITOR TEXTILE INDUSTRIES:

We would appreciate information from your readers as to how to improve work on a Whitin Model "H" comber. We find that long fibers come out at the back and that the sliver delivered is lumpy.

We are taking out 13% waste and the settings on our combers are as follows:

Back detaching roll to first row of needles—Index 20½, finger gauge 1⅛".
Cushion plate and steel detaching roll—Index 14½, No. 9 gauge.
Nipper nip to half lap—Index 2, No. 20 gauge.
Tension of nipper track—Index 11¾, .010.
Setting of top detaching roll to bottom steel roll—level.
Back top detaching roll to front top detaching roll—Index 15, 13 step gauge.
Top comb to top back leather detaching roll—Index 15, 20 gauge.
Depth of top comb—flat on detaching roll, 1/32" gauge.
Detaching roll starts forward—Index 10¾.
Nipper starts forward—5¼.
Setting of top comb to front steel detaching roll — Index 15, 1⅜" gauge.
Setting of feed roll to nipper—Feed roll set to nipper with nipper closed, Index 1, 9/16".

CONTRIBUTOR No. 7932

(Editor's note: Prior to publication, this inquiry from CONTRIBUTOR No. 7932 *was submitted to* CONTRIBUTORS No. 7952 *and* 7953 *for their opinions. Their comments follow. Others are invited to give their ideas.)*

◆

EDITOR TEXTILE INDUSTRIES:

We would suggest that CONTRIBUTOR No. 7932 take out 14% noils and set the nipper nip to the half lap on Index 2, using a 25 gauge. This will open it a little more, taking out a slightly greater amount of waste. We had the same difficulty and this is the method used to solve our problem.

CONTRIBUTOR No. 7932 does not give the grade and length of staple being run, but we assume that he is using something like 1 1/16" staple cotton of good grade for his combed stock.

CONTRIBUTOR No. 7952

◆

EDITOR TEXTILE INDUSTRIES:

Although CONTRIBUTOR No. 7932 does not give the grade and length of staple being run, we assume that 1 1/16-inch cotton is being used.

We have found by long experience that a heavy lap will cause lumps in the delivered combed sliver. A lap can be too heavy for the half lap.

We do not have Model H Whitin combers, but have Whitin D-2 and C models.

CONTRIBUTOR No. 7932 might improve the operation of his combers by having them feed a little late.

CONTRIBUTOR No. 7953

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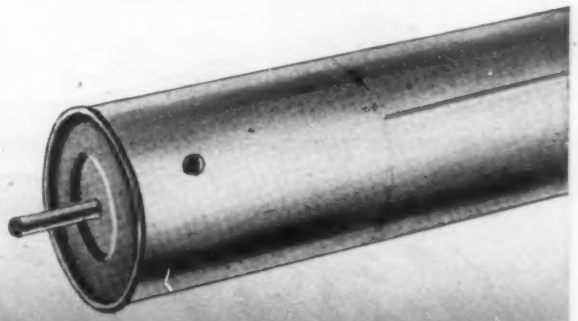

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HYMOLON K is 100% active, contains no water, salts or cheap alkalies, and shows about 4 times the scouring of a good soap. Accordingly, there is less material to ship and handle. Hymolon K economically combines in one product good wetting-out and excellent detergency. The concentration required varies with the type of operation, usually 0.1 to 0.4% on the weight of the goods.

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HYMOLON K is recommended for scouring and dyeing operations for all types of textile fibers; for unsurpassed detergency of all forms of woolens; and for the kier boiling of cotton. It gives a heavy, continuous, foamy bath and is especially useful in cleaning operations where emulsification and dispersion of spinning waxes or oils are of importance.

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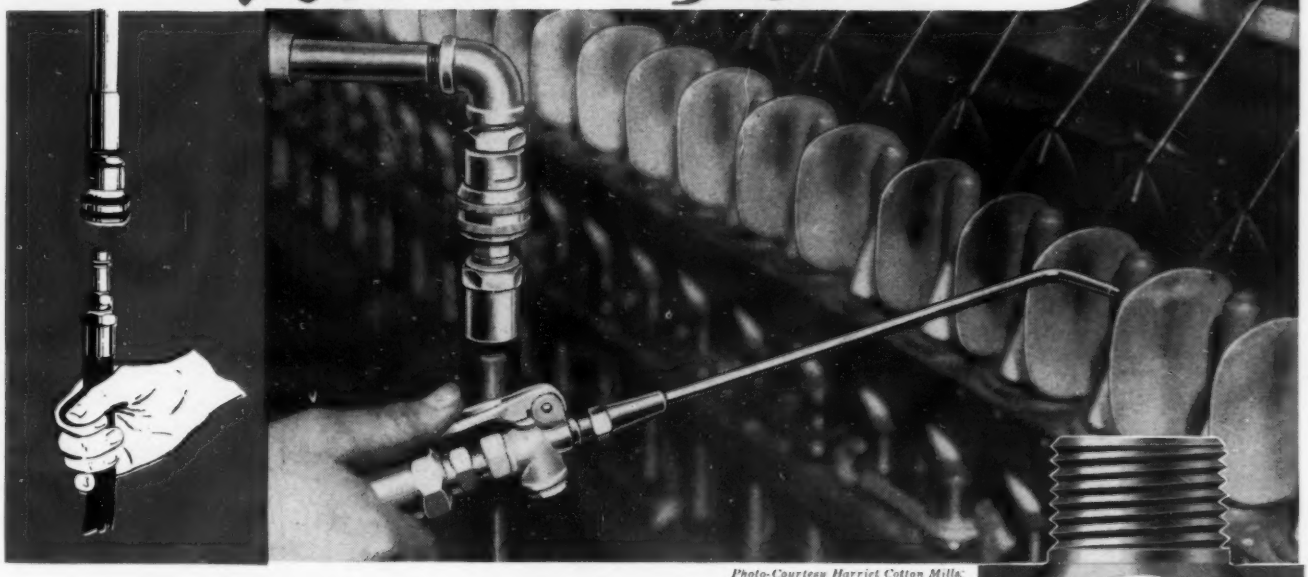

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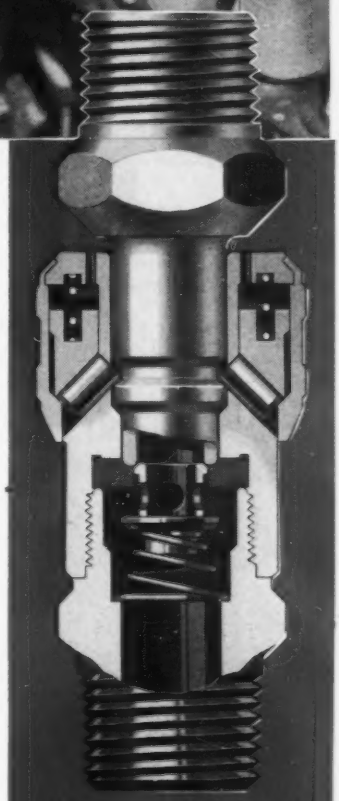
HANSEN COUPLINGS
speed up this routine job

Hand cleaning is the only way to remove lint and fly from the spinning frames and other "hard-to-reach" places. "Blowing off" these accumulations with the Hansen Air Blow Gun and hose equipped with Hansen Quick Connect Couplings, is the easiest and quickest way to do this routine job. ● Plug in the hose to couple and *open* the air line, pull back the socket sleeve to uncouple hose and *shut off* air. Swivels in all directions, with no leakage at any time. Inside the coupling is an automatic valve that shuts tight when the hose plug is pulled out. No unscrewing of hose connections, no shut-off valves . . . and no lost air. ● Made in sizes to fit your present hose and air lines. Size recommended for new installations: ½" pipe line, ½" I. D., 1" O. D. Hose. Parts and part numbers for a new installation in this size are shown below. Write today for catalog and details.



HANSEN REPRESENTATIVES

NEW ENGLAND STATES:
A. D. Geiger, Belmont, Mass.

EASTERN, SOUTHERN STATES:
B-R Engineering Co., Baltimore, Md.

NORTHERN OHIO:
F. & W. Ursem Co., Cleveland, Ohio

SOUTHERN OHIO, WEST VA., KY.:
Steinhagen Airline Products, Dayton, O.

NORTHERN ILL., EASTERN IOWA:
Norris Engineering Co., Chicago, Ill.

INDIANA, WISCONSIN:
Neff Engineering Co., Ft. Wayne, Ind.

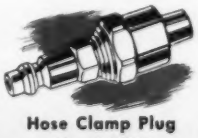
CENTRAL WESTERN STATES:
John Henry Foster Company, St. Louis, Mo., Minneapolis, Minn.

WESTERN, SOUTHWESTERN STATES:
Burklyn Co., Los Angeles, Calif.

NORTHERN CALIF., NEVADA:
H. E. Linney Co., Oakland, Calif.

MICHIGAN:
Wm. H. Nash Co., Detroit, Mich.

Socket
No. 5300



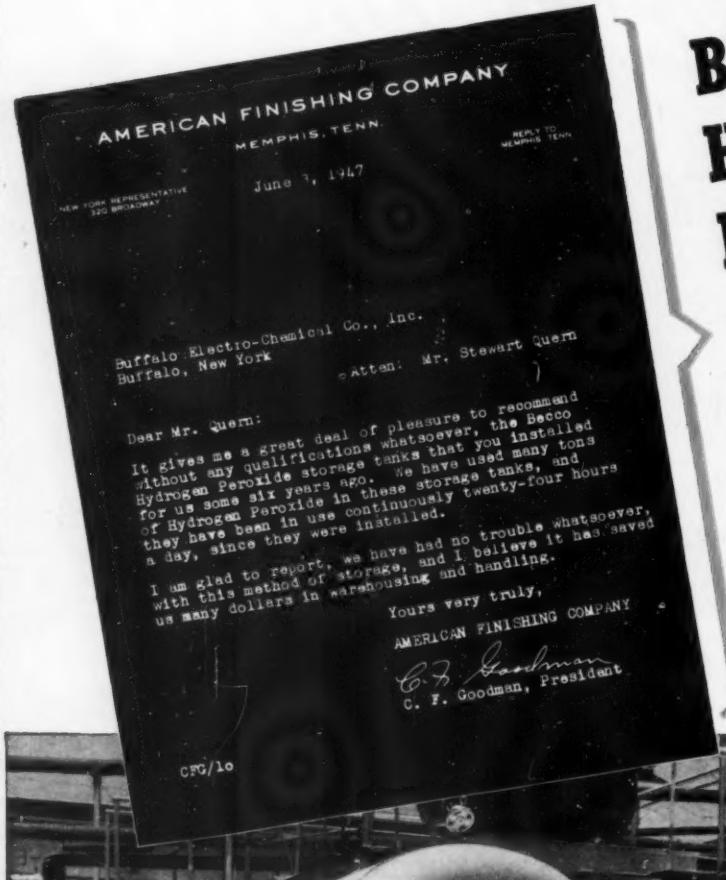
Hose Clamp Plug
No. 5-PP19

Hose Clamp
No. HC-2P19

Air Blow Gun
No. 25

Extension Nozzle
No. 26

The HANSEN MANUFACTURING Company
4031 WEST 150TH STREET . . . CLEVELAND 11, OHIO



AMERICAN FINISHING COMPANY

MEMPHIS, TENN.

NEW YORK REPRESENTATIVE 320 BROADWAY

REPLY TO MEMPHIS TENN.

June 3, 1947

Buffalo Electro-Chemical Co., Inc.
Buffalo, New York

Atten: Mr. Stewart Quern

Dear Mr. Quern:

It gives me a great deal of pleasure to recommend without any qualifications whatsoever, the Becco Hydrogen Peroxide storage tanks that you installed for us some six years ago. We have used many tons of Hydrogen Peroxide in these storage tanks, and they have been in use continuously twenty-four hours a day, since they were installed.

I am glad to report, we have had no trouble whatsoever, with this method of storage, and I believe it has saved us many dollars in warehousing and handling.

Yours very truly,

AMERICAN FINISHING COMPANY

C. F. Goodman, President

CFG/lo

BECCO HYDROGEN PEROXIDE "...to recommend, without any qualifications whatsoever..."

The American Finishing Company is only one of Becco's distinguished customers who use, with complete satisfaction, Becco Hydrogen Peroxide in bulk shipments.

We invite your consultation with us...at no obligation, of course ...on your particular requirements.

BECCO SALES CORPORATION

AGENTS FOR BUFFALO ELECTRO-CHEMICAL COMPANY, INC.

BUFFALO 7, NEW YORK

New York Boston Philadelphia Chicago Charlotte

More Comments on Cotton Between Cylinder & Frame

Subject Briefed: *Cotton gets between the cylinder and the frame side of the card. What can be done to remedy this condition?* (CONTRIBUTOR No. 7791, *September* 1946.)

EDITOR TEXTILE INDUSTRIES:

The main factors that govern the amount of cotton that gets between the cylinder and frame of a card are as follows:

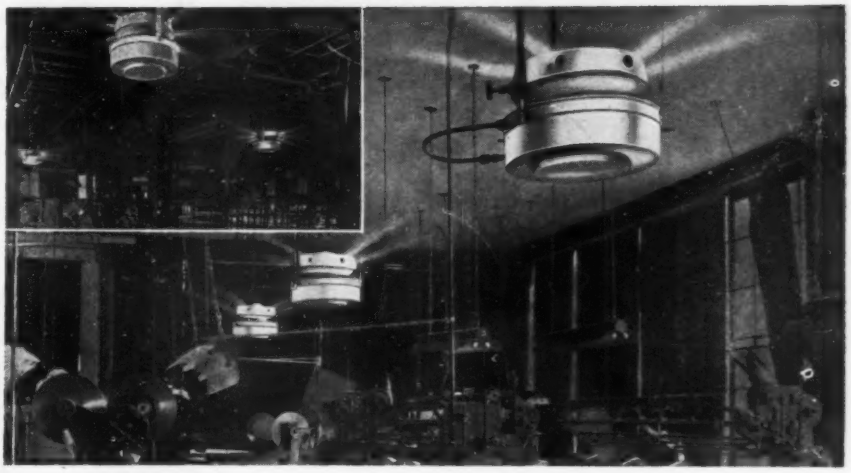
(1) Not cleaning out from under the card often enough. If the waste is allowed to pile up under a card until it touches the screen, the short fibers cannot be thrown through the ribs of the screen so they are blown out on each side of the cylinder. More and more fibers collect until they cause lumps of cotton to appear between the cylinder and frame. Cards should be cleaned out underneath every 24 hours.

(2) Faulty setting of the screen. If the screen is not set close enough to the cylinder, the fibers are thrown against the screen with such light pressure that they are only caused to lodge on the screen instead of being thrown through it. The air current caused by the revolving cylinder tends to force the fibers out at each end of the cylinder, causing cotton to collect at the cylinder ends. Cylinder screen settings should be as follows: Nose 1/16″—center .034″—back .022″.

(3) Screens that are not cleaned often enough. Screens should be taken out and cleaned at least once a year. They should be polished with graphite or powdered chalk to keep them slick and smooth. All the ribs should be inspected and cleaned. Screens that are allowed to become rough and sticky will not allow the waste fibers and foreign matter to be thrown through them, so the fibers are blown out each end of the cylinder by the air current caused by the revolving cylinder.

CONTRIBUTOR No. 7977

Clip the Coupon and LEARN HOW YOU CAN SOLVE Recurring HUMIDIFICATION PROBLEMS



When you have such problems as new fibers or change of humidity, you can ruin stock and waste good production time by having to fool around with cumbersome humidification.

Learn how Walton Humidification provides prompt action with its multi-directional domes (see photo) which come completely assembled, ready to hang up anywhere you can run a water pipe.

Learn about the principle of horizontal discharged vapor and our accurate automatic control operated by simply setting a dial.

Walton Humidification Proved

Write for your copy of "HUMIDITY" and get *all* the facts on Walton Humidification. We will be glad to refer you to satisfied users, to show you how "overnight" installation can be made, how economical it is to install and operate, and much more valuable information.

WALTON LABORATORIES, Inc.,
Irvington 11, N. J.

Please mail me copy of "HUMIDITY"

NAME.....
COMPANY.....
ADDRESS.....
.....

T.I.

ParksTurbo Traveling Cleaner

Its Mission . . .

Practically every textile operation was once done by hand. The mission of every piece of textile machinery you operate is to do something quicker, better, and at less cost than it was done before.

So then, the mission of

ParksTurbo Traveling Cleaners

is to keep textile machinery cleaner; to do it better; to do it at less cost. Operatives like it because it removes much of what is otherwise drudgery. More is accomplished with much less effort. Owners like it because it pays for itself so soon.

•

"A careful study has indicated that the Traveling Cleaner installation will pay for itself in two years. In addition, we are spinning better yarn."

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

DARNELL CASTERS

Built-in quality assures a long life of efficient service—it pays to "Demand Darnell Dependability".

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DARNELL CORP. LTD.
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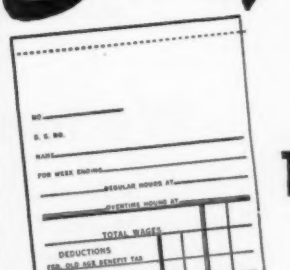
36 N. CLINTON, CHICAGO 6, ILL.

Easy to use



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- *Timesavers!*
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Cut your payroll in half with carbonized Tip-On-Velopes. They provide a permanent record of tax deductions, wages, etc. A signed receipt for extra protection. Write for free samples.

ATLANTA ENVELOPE CO.

Post Office Box 1267
ATLANTA 1, GEORGIA

NEW EQUIPMENT AND MATERIALS

Stainless Steel Steamer or Ager

Cook-P&N Machine Co., Inc., 365 Dorchester Ave., Boston 27, Mass., has announced a new stainless steel ager for use in their steam pad dyeing range.

Rolls, heads, shafts, and all parts exposed to processing steam are made of stainless steel, according to the manufacturer. Shafts rotate in self-aligning ball bearings secured outside the box and protected from processing steam.

It is understood that the speed of the top rolls is adjustable in relation to the speed of the rubber covered squeeze rolls on the delivery end of the machine. The bottom of the box is made to include a booster section. The standard ager includes an adjustable mouthpiece on the entering end and stainless steel perforated steel piping with splash guards in the bottom of the tank. Large hinged doors on both sides of the box permit easy access to the inside. Boxes are made with steel supports welded to the bottom.

Other models with shorter box and fewer rolls are available without sacrifice of standard 20-yard box capacity. Squeeze rolls are optional, the announcement indicated.

Resin Zeolite Developed

A resin zeolite, designated as Liquonex CR, has been developed by Liquid Conditioning Corp., 114 East Price Street, Linden, N. J.

It is claimed that this cation exchange material has a high capacity and permits high flow rates per square foot of area. Further, it is said that it practically eliminates the hardness of raw water, leaving a maximum of two parts per million of hardness, expressed as calcium carbonate. Liquonex CR is said to be non-siliceous or carbonaceous, consequently, it does not impart silica to the treated water.

This concern has also developed a new design of hot lime-soda softener in five types which cover a wide range of plant conditions and requirements.

The equipment, known as the Liquod Hot Lime-Soda Softener, has a deep sludge bed or blanket through which the raw water percolates upwardly. This sludge bed performs several functions. It assures thorough contact of the water with the lime and soda ash which it contains.

The five types of softeners which are available are said to provide a selection for different make-up requirements up to 100 per cent, and for deaeration of make-up or of both make-up and condensate either separately or together. Each type includes provisions for chemical feed, vent condenser, filters with backwashing water recovery so that the wash water does not pass through or disturb the sludge bed in the softener, and special automatic desludging valve which controls the depth of the sludge bed.

"Fabric Structure"

Chemical Publishing Co., Inc., 26 Court St., Brooklyn 2, N. Y., has recently published a book entitled *Fabric Structure*, which was written by John H. Strong, former manager of a textile plant and now technical editor of several textile publications.

The book discusses not only the finished products and their method of manufacture, but also the various yarns used in weaving, explaining their characteristics, requirements, testing, and treatment. Photographs and designs are used jointly in explaining the structure of many fabrics.

Students of weaving, textile technicians, designers and those in the industry who wish to refresh their knowledge of details should find this book a suitable addition to their library.

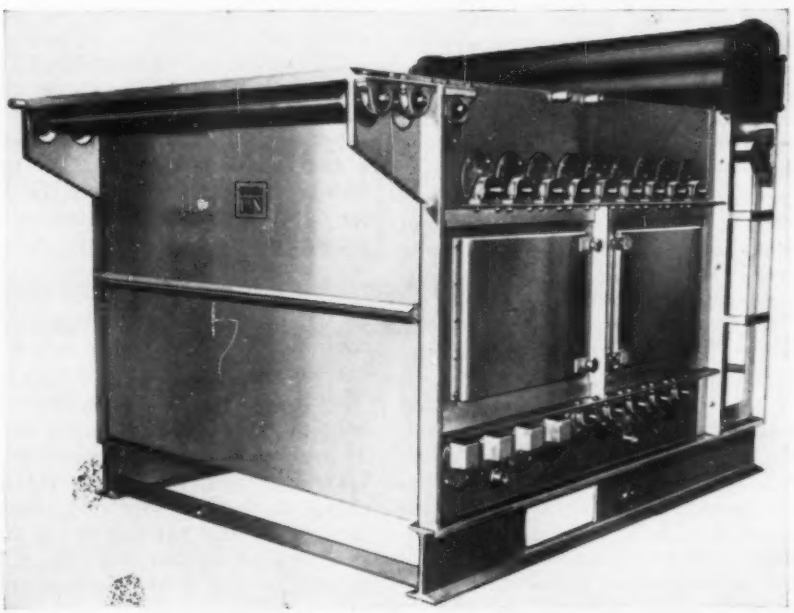
Glyoxal Now Available

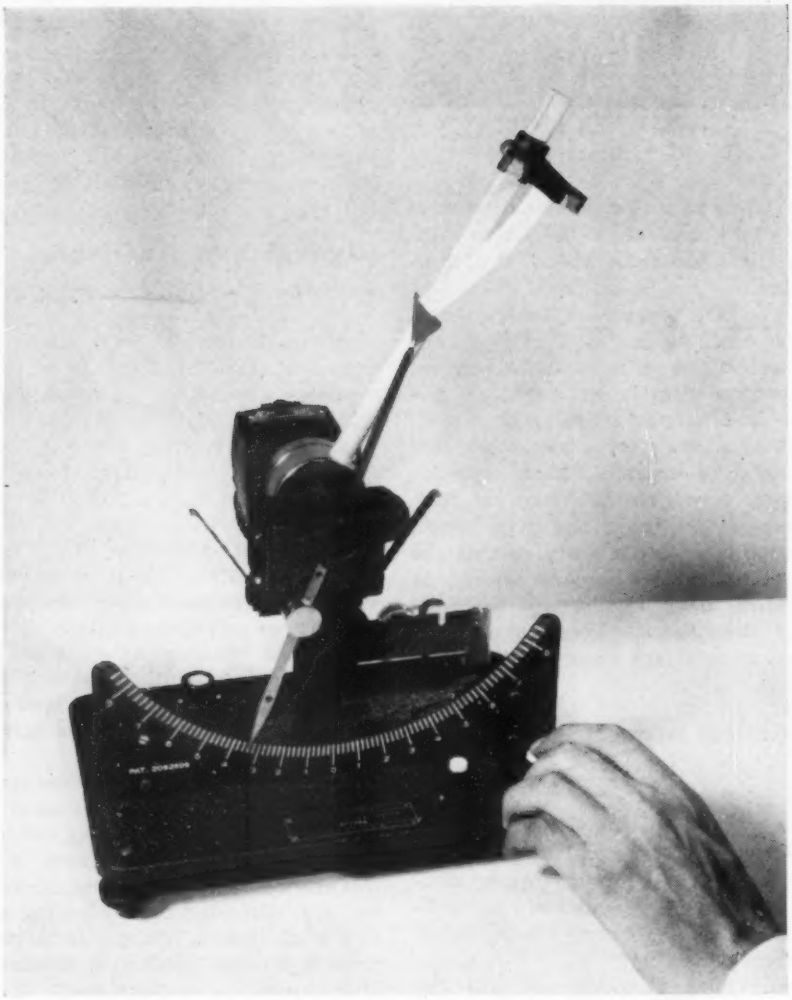
Glyoxal is now in production on a commercial scale, according to a recent announcement by Carbide & Carbon Chemicals Corp. It is now available as a 30 per cent aqueous solution. Glyoxal is reported to open up a greatly expanded future for the rayon industry since it produces an effect on spun rayon fabrics which is permanent to repeated washings and the hand and texture of the fabric are not altered. It is understood that after treatment with this product, viscose or cuprammonium rayon fibers are no longer soluble in cuprammonium solution and will not form cellulose xanthate. The tendency of the fabric to swell when wet is greatly reduced.

One of the chief advantages claimed for the glyoxal treatment is that there is no resin coating formed on the surface of the fibers. The treatment is applied without producing any stiffening or harshening effect on the fabric, and any unreacted glyoxal on the surface is removed after curing by a soap wash. It is said that hydrolysis does not take place under storage conditions nor during washing operations, and no offensive odors develop in the treated fabric.

The stabilized rayons show no chlo-

New stainless steel ager.





Motor-driven stiffness tester.

rine retention properties, so that white and pastel shades are safely treated, according to the manufacturer. In many cases with vat dyes, an improvement in light and wash fastness is indicated. This process causes little or no change in shade on vat colors, but the proper selection of suitable direct colors is necessary.

Glyoxal stabilization can be combined, under the proper conditions, with other finishes such as water repellent treatments which require much the same mechanical handling, including a curing operation. When desired, a firm or even a crisp hand can also be produced by adding the proper stiffening agent to the treating solution.

Comparable uses on other textile fabrics are reported to include the application of glyoxal to cotton twill fabrics for increased wear resistance and to rayon pile fabrics for improving resistance to crushing or creasing. Glyoxal also reacts with polyethyleneamines to yield products which are static eliminators in synthetic fibers and hosiery operations, the announcement indicated.

Stiffness Tester

Development of a new motor-driven stiffness tester has been announced by W. & L. E. Gurley of Troy, N. Y. The tester is reported to measure the stiffness of practically any thin flexible material, including coated fabrics.

The instrument is described by the manufacturer as follows. It has a balance pointer which is pivoted in jewel bearings and moves parallel to a sine scale mounted on the base. The pointer is loaded below the center with weights of 5, 25, 50, or 200 grams, fastened 1, 2, or 4 inches from the pivots. The arm carrying the sample being tested is moved by a small-geared synchronous motor which is controlled by a reversing switch on the base.

To make a test, a sample is first cut to standard width and length (½, 1, or 2 inches wide, and from ½ to 4½ inches long), clamped in a movable clamp so that the free end overlaps the top of the pointer by ¼ inch; and pressed against the top of the pointer until it is bent sufficiently to assume a short arc, shortening it by the ¼-inch overlap. The pointer is then automatically released. The greatest reading of the pointer against the sine scale is averaged in both directions, to eliminate any effects of curl, and may be multiplied by a factor applying to one of 144 combinations of sample and loading weight. The product is expressed as the stiffness of the sample.

Log Log Slide Rule

A new log log slide rule said to simplify computation has been announced by Pickett & Eckel, Inc., 5 S. Wabash Ave., Chicago 3, Ill.

The scales on the front of the rule are reported to be so arranged that only one setting of the hairline gives with each result its square root, cube root and logarithm. The log log scale on the back is expanded for greater accuracy, and arranged to give these five readings with each setting of the hairline: (1) Decimal fraction to 4 and 5 figures, (2) its reciprocal to 4 and 5 figures, (3) logarithm, (4) cologarithm, (5) natural logarithm to base. According to the manufacturer, the scales read from one ten billionth to ten billion, and give decimal point location.

A legend tells which scale to read when raising to powers.

The slide rule is made of magnesium alloy with plastic surface bearing permanent, expanded, easy-to-read washable scales. Size is 12⅛" x 2⅛" x 3/16". It comes complete with carrying case and an illustrated instruction manual.

Flexible Plasticizer

Paraplex RG-10, an addition to the series of versatile alkyd-type, polymeric plasticizing resins, and intended for use with nitrocellulose, urea and melamine resins, has been announced by the Resinous Products & Chemical Co., Washington Square, Philadelphia 5, Pa.

It is claimed that the new, flexible, oil-modified polyester possesses light color, improved alcohol tolerance, greater solvency for nitrocellulose, unusual pigment stability and increased adhesion to vulcanized rubber. Also, it resists ultra violet light and does not spew at temperatures as high as 325° F.

New Single Row Bearing

A new series of bearings designated as W-PP, the wide type Plya-Seal ball bearing, has been recently announced by the Fafnir Bearing Co., New Britain, Conn. Products in this series are said to be the same width as the standard double-row ball bear-

Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N.Y. SEPTEMBER, 1947

A chemist at the AVC Viscose Staple Development Plant, Nitro, W. Va., weighing out a sample of viscose solution. Devoted exclusively to the development of viscose rayon staple, the Plant conducts semi-commercial research to develop new products, and on chemical, economic and mechanical problems.

New Wax for Textile Fibers Softens, Lubricates, Is Anti-Static Agent

"Avcolube"* 100, a versatile new synthetic wax, has just been introduced by American Viscose Corporation. Extensive commercial tests have proved it an effective, economical agent for obtaining increased efficiency in textile processing and improved final quality. The self-emulsifiable compound has a remarkable combination of lubricating, softening and anti-static properties for all types of textile fibers.

It is a particularly valuable lubricant for dyed yarns, especially those of fine denier and low twist, on which it greatly improves winding and processing efficiency. In the knitting field, it may be applied to knitting yarns during the dyeing cycle, eliminating application of lubricants for later winding or knitting.

"Avcolube" 100 is chemically stable to all textile processing conditions. It is non-volatile, it does not migrate during drying nor cause changes in light fastness or wash fastness of dyed goods.

Technical service and assistance in working out specific applications of "Avcolube" 100 will be gladly furnished by the Textile Chemicals Division of the AVC Textile Research Department under whose specifications the product is made by the Atlas Powder Company, Wilmington, Del. Inquiries should be addressed to Textile Research Department, American Viscose Corporation, Marcus Hook, Pa.

*T. M. Reg. U. S. Pat. Off.

SIR SAMUEL SALVAGE COMMEMORATIVE BOOK

AVC is making available a booklet sketching the life of Sir Samuel Salvage, former president and chairman of the board. His death occurred in 1946.

The book is published just 50 years from the date—1897—when the young Englishman started his own small business, as an importer. His "artificial silk" imports so convinced him of the fiber's possibilities that by 1910 he had encouraged formation of the first company in America to produce it . . . The American Viscose Company, forerunner of the present corporation.

In telling the story of the man, the book touches on many fascinating high lights of the growth of the rayon industry . . . on which Sir Samuel's efforts have left such lasting effects. Copies on request.

RAYON 20 YEARS AGO

An impressive annual survey of rayon's startling progress takes up 40 pages of a leading textile magazine.

Rayon in necktie fabrics is giving manufacturers two distinct sales advantages—wider color range and wider price range.

MAKE USE OF *Avisco* 4-PLY SERVICE

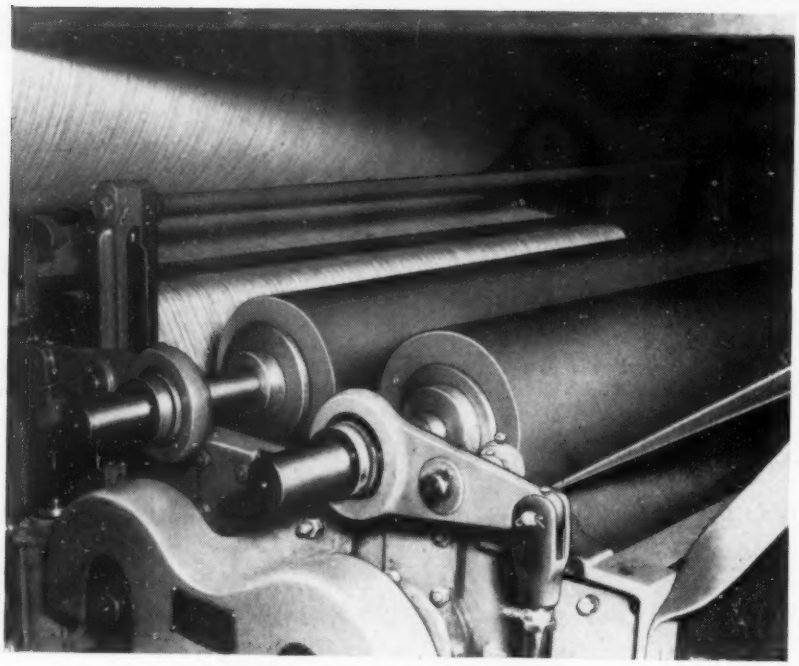
To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon

Offices: 350 Fifth Avenue, New York 1, N.Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.; Washington, D. C.; Wilmington, Del.



Accotex slasher squeeze roll cover.

ing but incorporate only a single row of balls. Plya-Seals are provided on both sides for retention of lubricant and exclusion of foreign material.

The principal advantage claimed for the new bearing is the fact that it is a self-contained anti-friction unit carrying a large sealed-in supply of factory packed grease ample for years of operation. Use of a single row of balls in a double-row width provides space for a longtime supply of grease without total filling, thus permitting "breathing," grease expansion due to aeration and agitation under high speeds, without leakage, according to the manufacturer. The double width insures shaft and housing support without slippage; the wide inner-ring face provides "pull off" face area over standard shaft shoulder diameters.

Synthetic Rubber Squeeze Roll Covering

A synthetic rubber squeeze roll covering for use on slashers has been developed and is now being marketed by the Armstrong Cork Company, Lancaster, Pa., according to a recent announcement. The new product is called Accotex Slasher Squeeze Roll Cover.

One of the features claimed for the new product is that it can be used for long periods of time without attention, except drying off when size boxes are cleaned. A number of these covers are reported to have been in use for as long as three years without noticeable wear.

It is said that the rubber roll covering maintains the same density day after day, giving a uniform warp, and, since the cover is seamless, warps are not streaked. It can be used with satisfaction on both back and finisher rolls, according to the manufacturer. When these covers are used on back rolls, a thinner size solution is recommended.

The new squeeze roll covers will be applied, cured, and sized to the proper outside diameter at the Armstrong plant in South Braintree, Massachusetts, then returned to the mill ready for use, the announcement said.

Mercury Cell Produces Caustic

A stationary mercury cell which is said to produce caustic soda of high purity and offers certain operating economies has been designed by The Mathieson Alkali Works, 60 East 42nd St., New York 17, N. Y., according to a recent announcement. Caustic soda of high purity is required in the manufacture of rayon, according to the manufacturer.

The new cell is reported to produce 50 per cent liquor directly at the cell. Also, it is claimed that the unit conserves floor space, requires less power and makes use of less costly construction materials.

Licensing arrangements are on a royalty basis, according to the announcement, and are available to companies in foreign countries and under certain conditions to companies in this country.

It was explained that mercury cells produce caustic soda by the electrolysis of brine in two stages. In the first stage, sodium amalgam and chlorine are formed. In the second stage, the amalgam is decomposed to form caustic soda and hydrogen.

The new cell consists of two chambers, an electrolyzer and a decomposer. Between these two chambers is located a pump. In the electrolyzer, brine contacts a mercury cathode and a graphite anode. In operation, direct current is passed through the electrolyzer forming sodium amalgam at the cathode and chlorine gas at the anode.

The sodium amalgam is pumped to the decomposer, where it becomes the anode (graphite packing constituting the cathode). The sodium of the amalgam reacts with water in contact with the graphite packing, to form caustic soda and hydrogen gas.

The mercury, now practically freed of sodium, is recirculated to the electrolyzer.

Ball Bearing Lap Pin

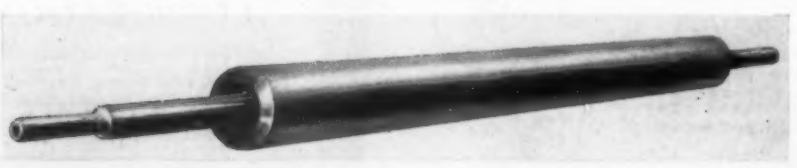
Precision Gear and Machine Co., Inc., 2001 N. Tryon St., Charlotte 2, N. C., has announced the production of a ball bearing lap pin for pickers which is said to greatly improve the quality of laps produced at each picker. It is claimed that a lap that is "dished" on one end and "cupped" on the opposite end can be squared up by the use of this new lap pin.

The pin consists of a shaft and a sleeve which rotates on four ball bearings. These are reported to be sealed bearings that require no lubrication.

Only the outer sleeve revolves with the lap. The logger head grips the shaft which does not turn. It is understood that some of the mills where this device is in use have removed the logger head rollers entirely, replacing them with blocks of wood or

(*Continued on page* 149)

Ball bearing lap pin.



We repeat: today's best dollar value in a warp size is

HOUGHTO-SIZE CW

We make that unqualified statement because of our experience—dating back many years — with warp size compounds, and because of the outstanding performance of this newest member of the Houghto-Size family.

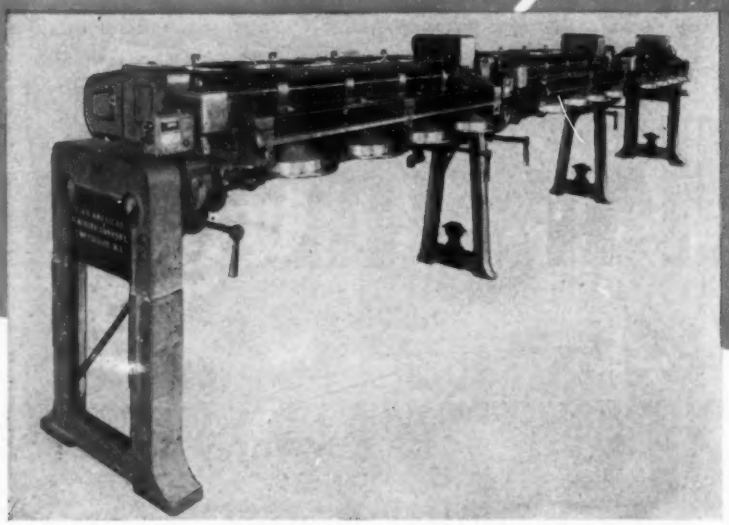
Here is a unit product, combining softener, binder and plasticizer. There's nothing to add except starch and water.

And it's the best dollar value on the market because of its low kettle cost, as compared to other size mixtures. Yet this low cost is not at the expense of quality, for you'll get a smooth-running warp of high breaking strength which won't stick, and which will weave better, stepping up your weave-room efficiency.

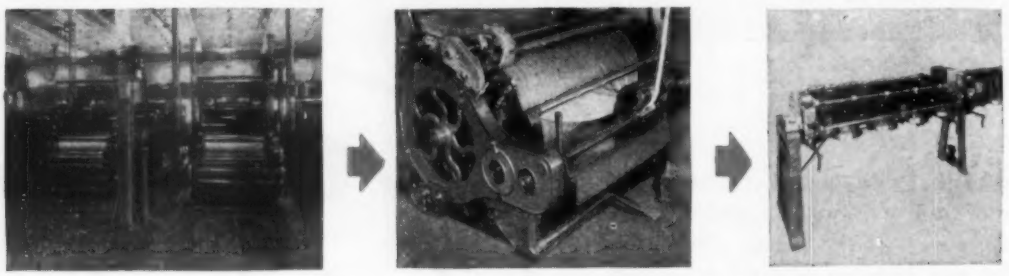
So try HOUGHTO-SIZE CW and prepare to be surprised at both cost and quality of sizing. If you would like to conduct your own tests, write E. F. Houghton & Co., Phila. 33, Pa., or Charlotte 1, N. C.

H & B

A Quality machine



THE DRAWING FRAME is the only unit of mill machinery devoted 100% to the achievement of quality. Cotton comes to the drawing frame as sliver and goes from it to the slubber as sliver,—but sliver of the highest quality. To produce sliver of the highest quality H & B unhesitatingly recommends two processes of drawing. By this method a drawing sliver composed of 36 different card slivers goes from drawing frame to slubber. This double drawing process results in more and better parallelization of the fibres and ultimately in more even yarn.



RAW COTTON TO LAP TO SLIVER TO SLIVER

This is why we say, *"The drawing frame is the only unit of*

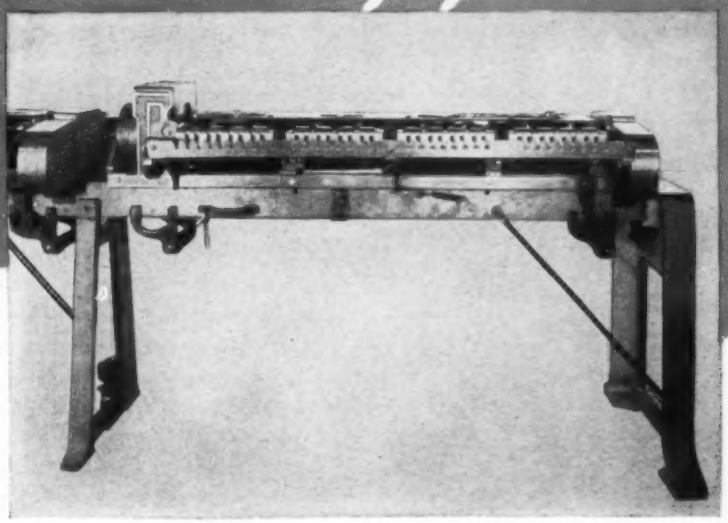
H & B AMERICAN

Builders of Modern

FACTORY, EXECUTIVE OFFICES AND EXPORT

DRAWING FRAME

for a Quality process



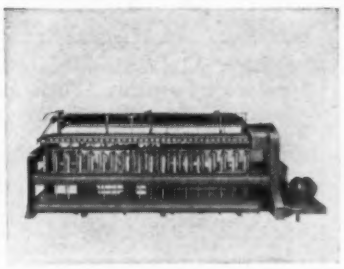
The H & B Drawing Frame incorporates several features that help make it a valued performer in many mills where the emphasis is on the quality of the end product.

1 Most sensitive and accurate electric or mechanical stop motions.

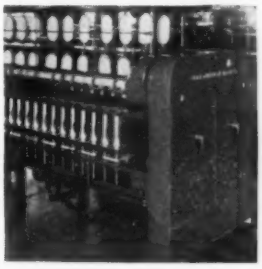
2 Helical cut draft and calender roll gearings.

3 Oil-lite bearings on top rolls.

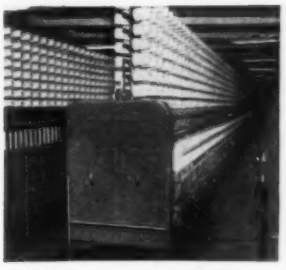
4 Redesigned calender roll covers.



TO ROVING



TO YARN



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mill machinery devoted 100% to the achievement of quality."

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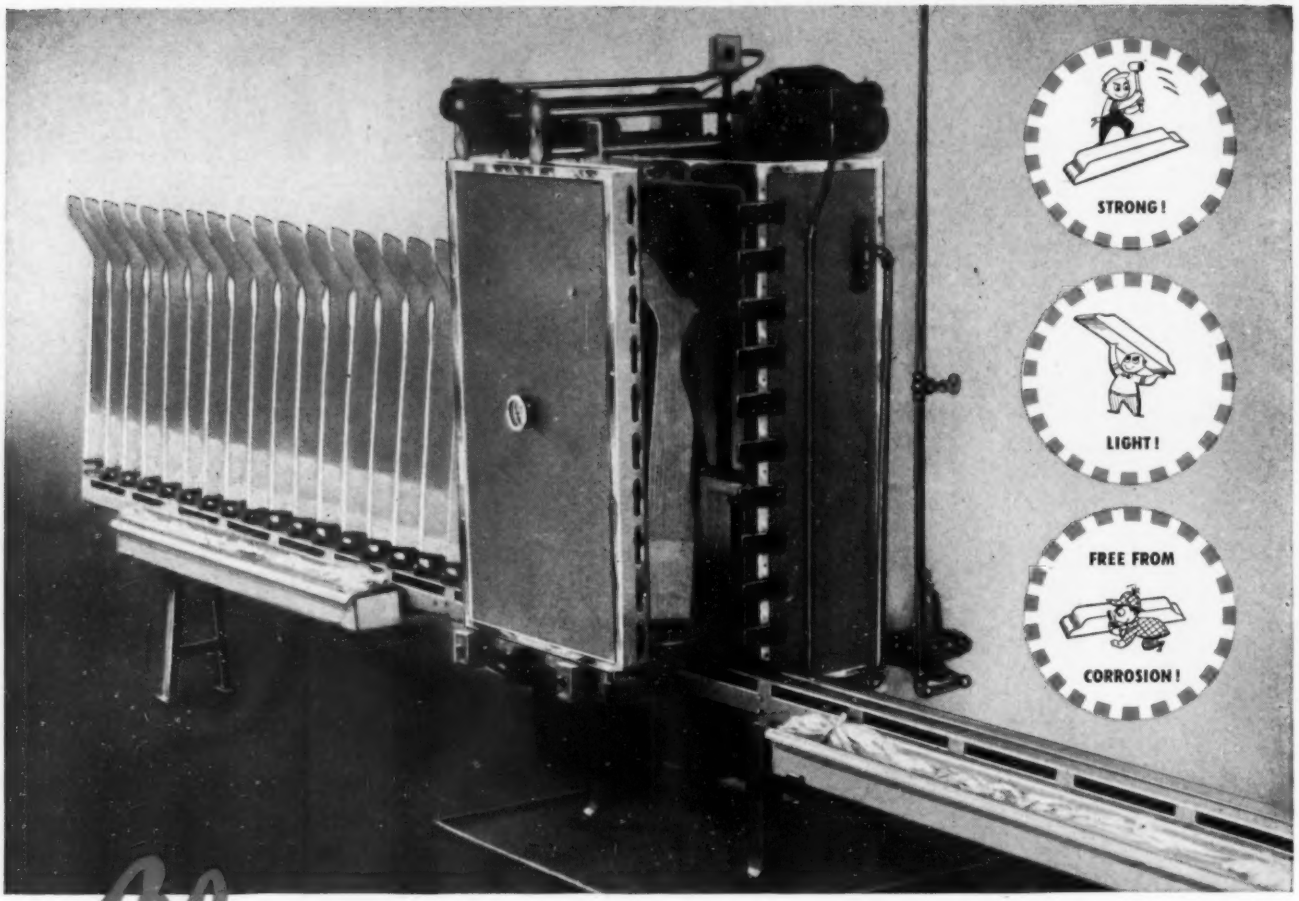

Aluminum stocking forms keep their shape . . . make doffing easier

Stocking forms of Reynolds Aluminum are light and easy to handle... have superior strength. Repeated trips through the preboarding steam chamber will not change their shape nor harm their finish.

Even the most delicate nylon hosiery can be preboarded on aluminum forms. The bright, highly polished finish will not rust or corrode, requires no painting or coating. Long-lasting aluminum stands up under the roughest handling... maintenance costs are cut.

If you are designing a new machine, or considering the purchase of new equipment, call in Reynolds Textile Engineers. They will be glad to consult with you . . . help you take advantage of the many possibilities of aluminum design to cut costs and eliminate dead weight. No obligation, of course.

Write to the Reynolds field service office nearest you, or to Aluminum Textile Sales Division, Reynolds Metals Co., 310 Hanna Building, Cleveland 15, Ohio.

Other applications where strong, light, rustproof Reynolds Aluminum does a better job for the textile industry . . . and for you!

Doffing and Roving Trucks
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Trident or Cheese Boards
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Two Famous

SMITH-DRUM

$ COST CUTTERS

Smith-Drum Hosiery Dyeing Machine

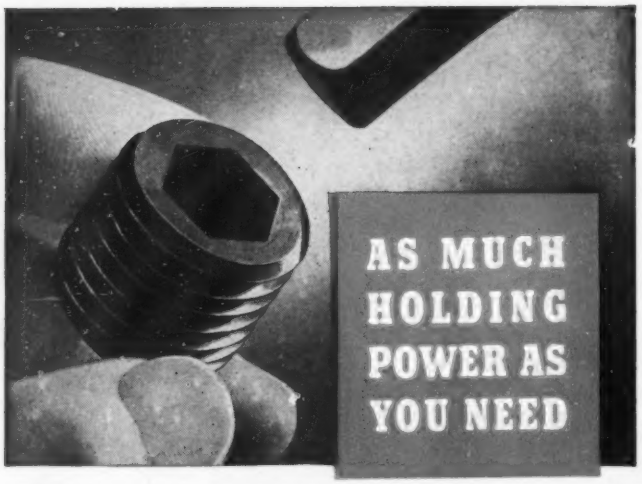
This famous machine has reduced operating and maintenance costs to a bare minimum in most of the larger mills in the United States and Canada. Many of these machines have been in daily operation for 25 years and longer. This dependability is largely responsible for the fact that nine out of every ten pairs of hosiery made in this country are dyed in Smith-Drum machines. Remember this record of performance when you consider the purchase of new equipment.

Smith-Drum Skein Dyeing Machine

This is the machine that has revolutionized skein dyeing by "moving the liquor instead of the yarn"! Elimination of snarling and breaking of yarn saves time, trouble and costs in winding and results in a higher quality finished fabric. Savings in dyestuffs, steam and water . . . lower labor costs . . . faster dyeing time . . . result in a 25% to 30% cut in dyeing costs. Larger batches and more of them per day increase production as much as 50%. Write for more complete information.

SMITH, DRUM and CO., Allegheny Ave. at 5th Street, Philadelphia 33, Pa.

SMITH-DRUM PROCESSING MACHINERY for hosiery dyeing, skein dyeing, package dyeing, beam dyeing, package extracting, package drying, skein mercerizing, warp mercerizing



Whether a "hex" socket screw is right for your fastening, or—because of small size of components, vibration conditions or ease of disassembly—the BRISTO "Multiple-Spline" is needed, you get *maximum strength* from Bristol's "B-Line".

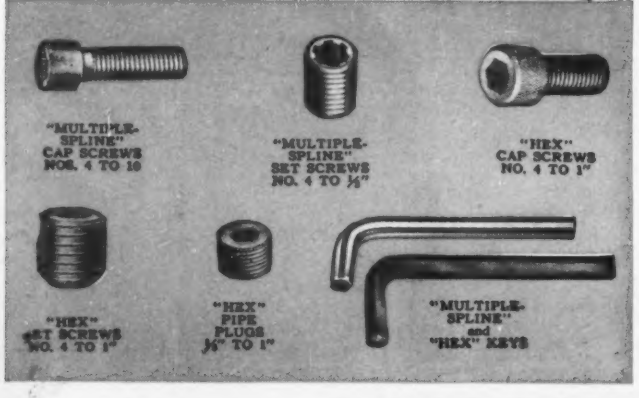
Both the "Hex" and "Multiple-Spline" socket screws represent careful, correct design by Bristol engineers. In addition, Bristol's system of raw material control *keeps* quality up to rigid standards. And Bristol's inspection methods, which include tests for hardness and ultimate strength, gauging for precision of lead and pitch—plus a final visual inspection before packing—result in "Hex" and "Multiple-Spline" screws that feature maximum strength . . . uniformity . . . accuracy.

For extra security—at no extra cost—select the right style from the Bristol "B-Line"—made by a manufacturer with 33 years' experience in socket screws. Order from your distributor. THE BRISTOL COMPANY, Mill Supply Division, 125 Bristol Road, Waterbury 91, Conn.

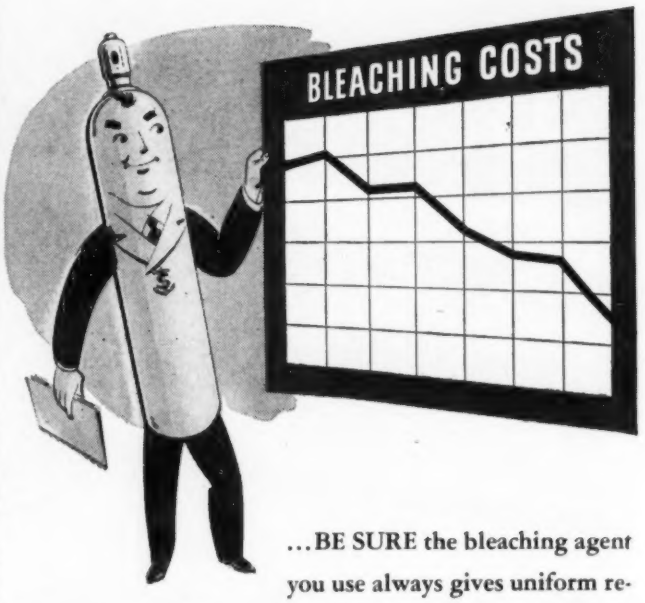
WHY "MULTIPLE-SPLINE" MEANS TIGHTER

NO EXPANDING PRESSURE: THE KEY PULLS THE SCREW AROUND

Only the "B-LINE" has the right socket screw for every application


"MULTIPLE-SPLINE" CAP SCREWS NOS. 4 TO 10
"MULTIPLE-SPLINE" SET SCREWS NO. 4 TO ½"
"HEX" CAP SCREWS NO. 4 TO 1"
"HEX" SET SCREWS NO. 4 TO 1"
"HEX" PIPE PLUGS ⅛" TO 1"
"MULTIPLE-SPLINE" and "HEX" KEYS

"I give reliable bleaching ...and at low cost, too!"



...BE SURE the bleaching agent you use always gives uniform results. Specify SOLVAY Liquid Chlorine, the oldest, most successful bleaching agent, as well as the lowest in cost.

THE NUMBER OF LARGE textile businesses now using SOLVAY Liquid Chlorine is testimony of its uniform performance. Yes . . . you get controlled quality—purity—uniform results—low costs . . . with Solvay Liquid Chlorine!

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hard rubber.

The steel outer shell is said to be taper ground so that the lap will come off easy. The ends have hardened collars so that they will not become burred when dropped on the calender rolls.

Fred Hunter of the carding department at Springs Cotton Mills, Lancaster, S. C., is reported to be the inventor of the new lap pin. All manufacturing and sales rights have been assigned to Precision Gear and Machine Co., Inc.

System for Identifying Reslooms Announced

A new system of identification to distinguish the different formulations of Resloom was announced recently by Monsanto Chemical Company.

This textile chemical was first introduced to make rayons crush-resistant. Now, a new formulation is said to make woolens washable. Development work is progressing on a third variation which, it is understood, will provide important improvements to cotton.

Designations have been adopted as follows:

1. Resloom-Formula R for crush-resistant rayon.
2. Resloom-Formula W for washable wool.
3. Resloom-Formula C for wrinkle-resistant cotton.

Nylon Technical Service Manual

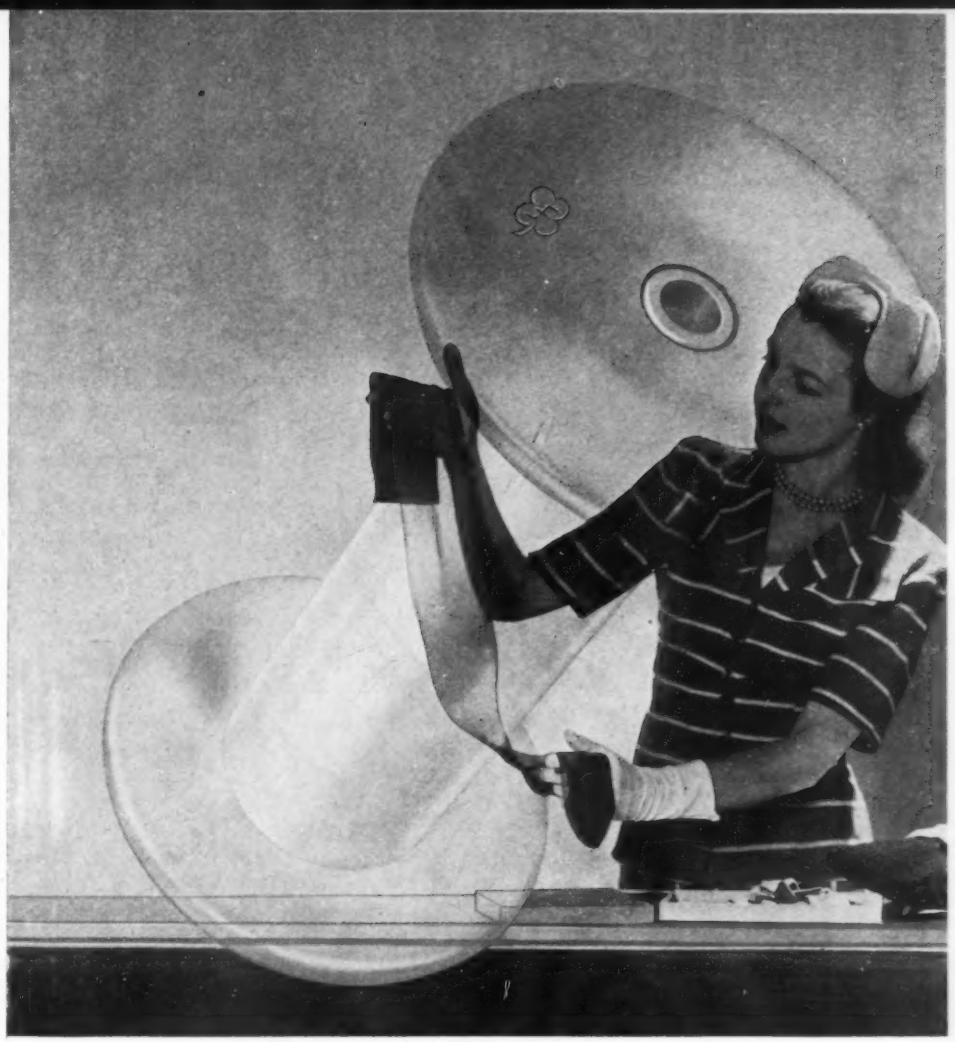
The nylon technical service section of E. I. du Pont de Nemours & Co., Wilmington 98, Del., has recently released a manual comprising bulletins dealing with nylon yarn properties, phases of textile processing, and problems bearing on the manufacture of woven, knitted, etc., nylon fabrics.

The manual is in loose-leaf form since it is contemplated that from time to time certain bulletins will be revised. It is also expected that frequent additions will be necessary.

This manual should be most helpful to those in the industry who are processing nylon fiber.

Index to ASTM Standards

Index to ASTM Standards, as of December, 1946, was recently issued by the American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa. This publication is an adjunct to the 1946 Book of Standards and enables any of the some 1400 standard specifications and tests in the volumes to be located readily. The index is also of service to those who wish to determine whether ASTM has issued standard specifications, test methods, or definitions cov-



Back of every great development in Textiles stands the Bobbin

A Hosiery Manufacturer develops a new twist construction . . . It calls for a change in the throwing operation . . . possibly a new type Bobbin.

Before that new construction reaches the hosiery counter, Cloverleaf-Freeland works with the throwster, studying all of the problems involved. Is the present Bobbin outmoded? Shall we try a new type barrel, a new head? Is the traverse right?

This is just one example of Bobbin "engineering" at Cloverleaf-Freeland — engineering that builds great Bobbins.

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Now that your plans for increased production call for addition of good serviceable textile equipment, the simple thing to do is—*contact Comer!*

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ering a particular engineering material or subject.

All items are listed in the index under appropriate key words according to the particular subjects they cover. As a convenience, a list is given of the specifications and tests in numerical sequence of their serial designations.

Copies of the 242-page publication are furnished without charge on written request to ASTM headquarters, at the address given.

"Water Analysis"

The third edition of the booklet *Water Analysis* as prepared by the technical and engineering staff of the Solvay Process Co. was published recently. Methods of analyzing water for municipal and industrial use are presented.

This booklet was prepared for the purpose of making available, in a concise form, the methods for the analysis of water adopted for use in the Solvay laboratories. It is not intended as a general reference work, and the more complete sources will need to be consulted for many details and for those tests less frequently encountered.

There is a section devoted to the following subjects: mineral analysis of water; stationary boiler water analysis; municipal water supplies; railroad water supplies; swimming pool waters; polluted waters; reagents, indicators and standard solutions. In addition to these a handy set of conversion tables is included.

It is understood that the methods for the analysis of water as presented have been found suitable for rapid work without undue sacrifice in accuracy. According to Solvay, most of the methods are based on long experience, while others embody recent developments as disclosed in the literature.

This booklet, known as Bulletin No. 11, should serve as a handy reference book for those of the textile industry who are engaged in laboratory and research work. Copies may be secured by addressing Solvay Sales Corp., 40 Rector Street, New York 6, N. Y.

Unit Heater Thermostat

Barber-Colman Co., of Rockford, Ill., has announced a new line voltage unit heater thermostat. The new thermostat is reported to be small (2" x 4" x 1½") and can be used for either cooling or heating applications.

Adjustable stops are available so that lock settings can be obtained and the operating range limited. Contact rating is 10 amps. at 115 volts, 5 amps. at 230 volts.

AN

EXECUTIVE VIEWS

THE NEWS IN TEXTILES

What is a Good Foreman?

T. O. Moore, vice-president of the P. H. Hanes Knitting Co., Winston-salem, N. C., recently made a few remarks about foremen which seem to us to contain a great deal of common sense. Speaking before the Southern Conference on Human Relations in Industry, better known as the "Blue Ridge Conference," Mr. Moore enumerated some of the qualifications a good foreman should have. He listed them this way:

1. Loyalty.
2. The Ability to Get Along With People.
3. Initiative, Imagination and Ambition.
4. Judgment, Experience and Common Sense.
5. The Ability to Cooperate.
6. Self-Respect, Character and the Ability to Command Respect.

It seems that in those six items he has covered a lot of ground. You may be able to think of something he has left out, so look them over again and think about it for a moment. The only thing we can think of which might be added is the need for a sense of humor. Certainly, however, if a foreman had the ability to get along with people, Item No. 2, he would have to have a fairly good sense of humor, and so perhaps it is not necessary to make this addition.

Also included in the ability to get along with people would be the ability to understand people, to know what makes them tick, and the sympathy for humanity which has characterized all truly great leaders. If a foreman can understand the hopes, the fears, the doubts, the uncertainties, the love and the hate, the peace and the unrest which make up the warp and woof of the personalities of all human beings, if he can have that sympathy for humanity and that understanding, then we believe he has the makings of a good foreman, of a great leader.

What is Morale?

Mr. Moore also draws an interesting comparison between the company foreman and an army first sergeant, pointing out that good leadership and good morale mean as much to industry as to an army.

To thousands of textile men who not very long ago laid aside their uniforms, his comparison will be an especially apt one. From Tarawa to Normandy to Midway, hundreds of thousands of non-coms and officers learned in World War II that "morale is a lot of little things." They learned that morale may be a letter from home, a hot meal, a "less wet" place to pitch a tent (there were no dry places), or, greatest of all, the feeling a man has that he is recognized by his superiors as an individual and not as a cog in a machine.

If World War II did nothing else for America's young men, it made them realize, many of them for the first time, that "you can lead a good man through the fires of hell, but you can't drive him across the street." Non-coms and officers who learned that fact turned out to be the real leaders. Foremen who have learned that are today the key men in every industrial organization.

What is good morale? What does it mean to you? To this writer it means this: A mental condition which makes it possible—which even makes it essential—for the individual to carry out willingly and efficiently the orders of his superiors.

Note, in the sentence above, the word "willingly." That is the key word. In the army, as in industry, hundreds of thousands of men have carried out orders and will continue to carry out orders because they were afraid of what their superiors could do to them. That is not leadership, it is intimidation. A good foreman will know the difference.

The Third Question

In mentioning Mr. Moore's talk, and in rambling a good bit, we have raised two questions: What is a good foreman? and, What is morale? The third question which comes to mind was not a part of the address of the Hanes vice-president, and rightly so, because it was beyond the scope of his subject. But it is an important question. It is this: *What is a good executive?*

We hear a lot about the second hand, the foreman, the personnel man. Each has been described as a key man in an industrial organization. Their qualifications have been

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No one type of insurance policy can fulfill the protection needs of every income earner — or every group of workers. Therefore, each Group Insurance program underwritten by the Provident is based on a preliminary study and is *tailored-to-fit* the requirements of the firm and its employees.

Provident Group Insurance plans, now protecting nearly two million employees and dependents, can be written to provide life, accident and sickness, and hospital-surgical insurance—at a cost every employee can afford. The hospital-surgical benefits can even be extended to cover dependent members of the employees' families.

Full information is yours for the asking.

discussed, the need for outstanding men has been stressed. But what about the executive? What about the top executive? If he fails, then all else fails. Subordinates cannot properly function under an inefficient superior. He is the king-pin.

With that in mind, look back at the six qualifications quoted above for a good foreman. Don't you agree that if the top executive has these qualifications then he is a "good executive"? What else does he need?

What do you think?

Exports of Cotton Goods

It's a far cry from morale and leadership to figures on exports, but each has a place in the thinking of the textile man because even though the goods from his mill may not be sold abroad, the volume of foreign trade inevitably affects the market for textile products. So to bring our thinking up to date, or as nearly up to date as is possible at this writing, it is well to note that for the first five months of 1947 U. S. mills exported 582 million square yards of cotton cloth, duck and tire fabric, as compared with only 331 million square yards in the same period of 1946.

The latest month for which figures are available, May, 1947, shows exports of 147 million square yards, leading all other months in the current year, and approximately 50 per cent higher than for any month of 1946.

Some soothsayer has predicted that the exports of textiles will be limited in future months only by the availability of dollars in foreign markets. But what we'd like to know is how long the dollars are going to hold out!

Statistically Speaking

U. S. Department of Labor figures continue to show that the difference between wages in cotton goods and the cost of living is increasing. They show that wages have long ago outdistanced the cost of living. In April, 1947, the average cotton goods worker in the U. S. was earning 98.1 cents an hour. By now the figure will have gone over a dollar. Computing from Department of Labor figures on average hourly earnings in cotton goods and the cost of living, April, 1947, as compared with the yearly average for 1940, the picture is this:

Cost of Living	up 58%
Wages	up 138%

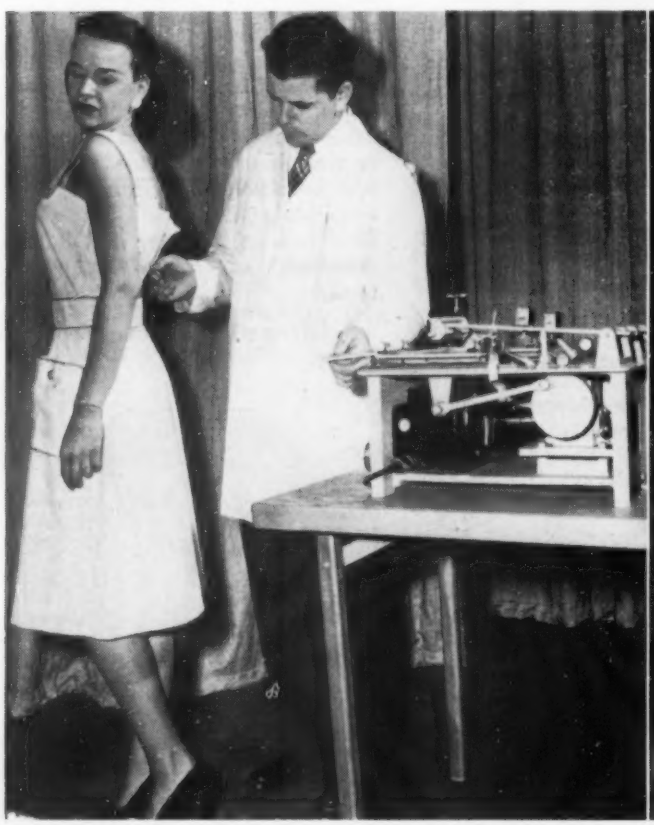
So, for whatever they may be worth, those are the figures.

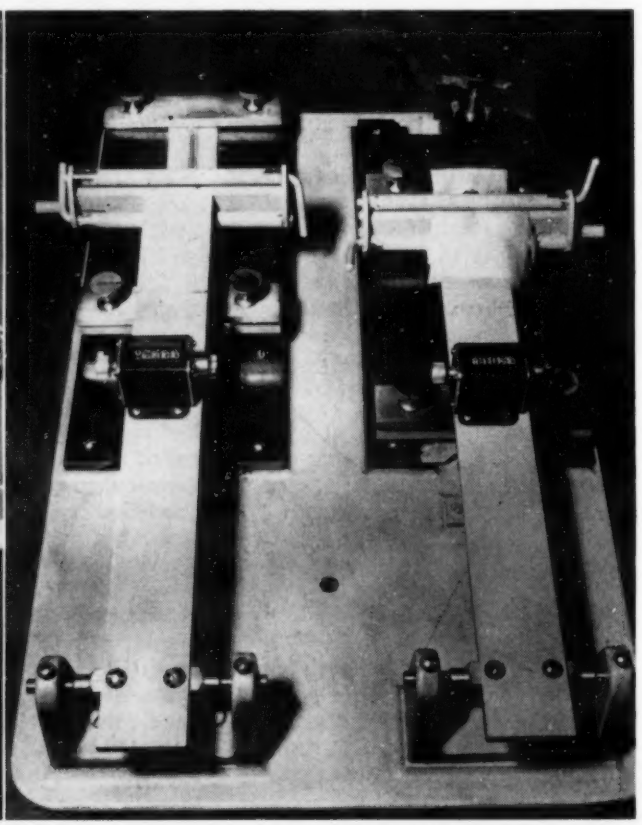
Abrasion Machine for Testing Zippers and Snaps

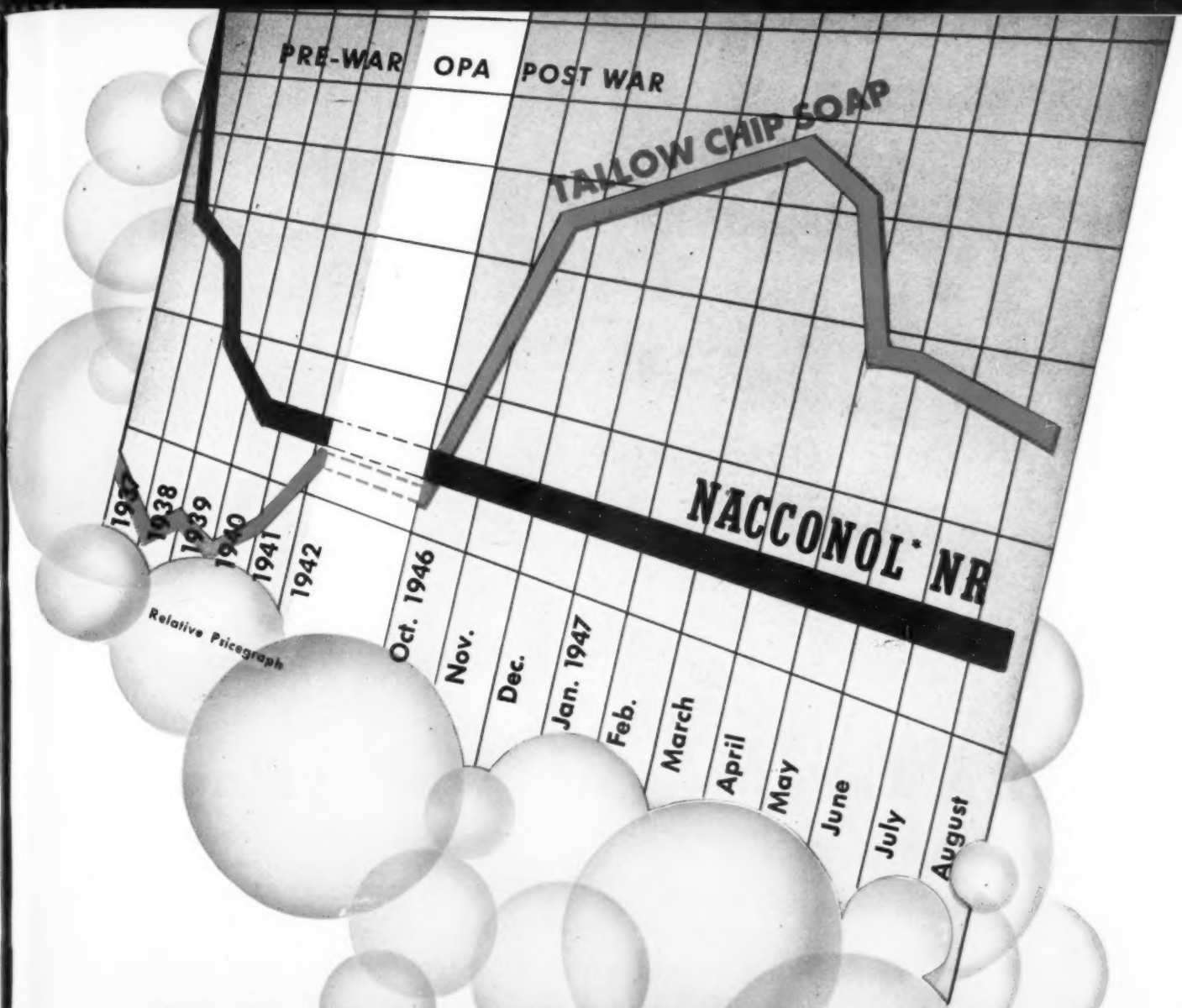
An abrasion machine has been adapted for the purpose of testing zippers and snaps by C. R. Holgate, chief of Reliance Manufacturing Company's textile testing laboratory, according to a recent announcement.

In testing snaps, the pieces of fabric to which the two parts of the snap are sewn are fastened to the abrasion machine so that the snap is closed as the abrasion arm moves forward and opened as it moves away. For zipper tests, the zipper proper is stretched along the base of the machine and the slide fasener is attached to the abrasion arm above; movement of the arm thus opens and closes the zipper. See the accompanying photographs.

This is indicative of what can be accomplished by using available equipment plus a little initiative.







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DYTEX Tubes for package Dyeing

The SONOCO "Dytex" Tube is priced for one-time use—and yet it is a rigid laminated fibre tube, impregnated and treated for extreme strength and toughness and is, of course, resistant to dyeing and bleaching formulas.

An original product of the SONOCO laboratories, to which has been added years of practical experience in the development of improvements and refinements.

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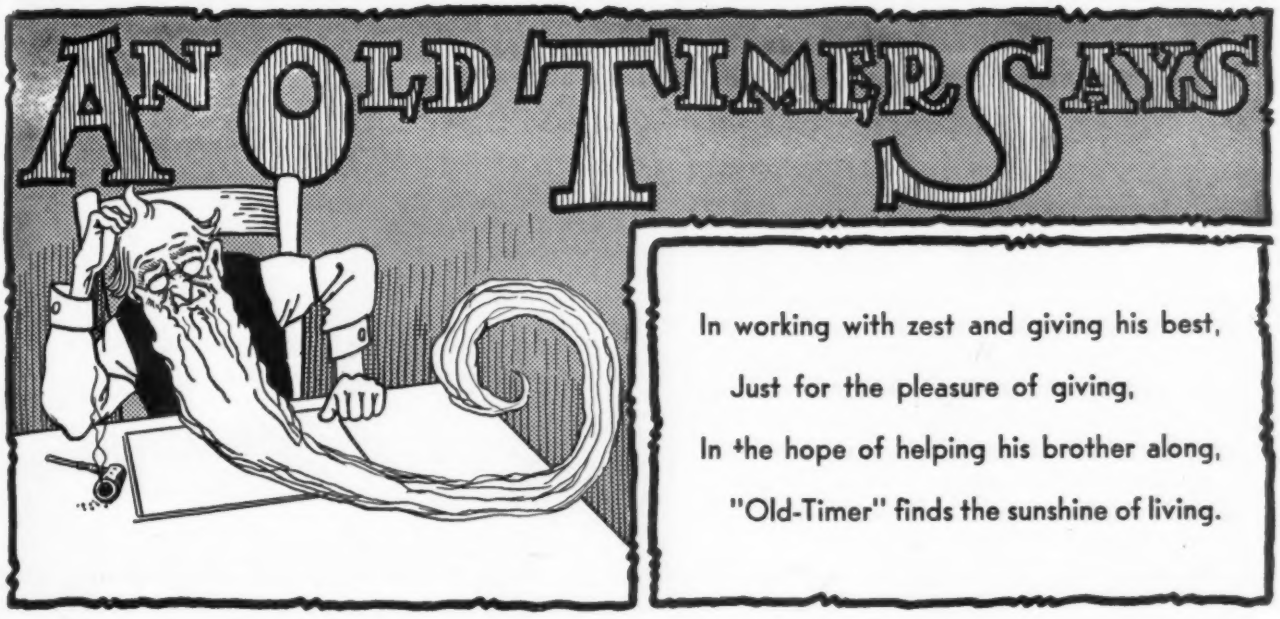

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Some Do's and Don't's

Do not read these Do's and Don't's too fast. Read each one slowly. Let them "soak in." They will help you—OLD-TIMER.

DON'T—read TEXTILE INDUSTRIES like you read your daily paper. Be observant. Make an effort to correctly interpret what you read. Keep constantly in mind that the author or writer is talking directly to you through the medium of the magazine.

DON'T—vascillate. Make your decision, then put every ounce of energy you have into the idea.

DON'T—review a decision until you wear it out and wind up by doing nothing.

DO—Make a start, even if you have not fully completed your plan or idea. That is better than no start at all.

DON'T—get into a rut of running your job by always going through the same routine every day. Start something new.

DO—Keep your main objective, your incentive, constantly before you.

DO—Be open minded toward taking advantage of new angles to an idea as you pursue it.

DON'T—let failure to see progress in something new that you are attempting to inaugurate cause you to fail to give the idea your undivided support. It takes time and perseverance to accomplish anything worthwhile.

DO—Enjoy hard things to do. Anyone can do the easy ones.

DO—the things that should be done first. Upon that decision often hangs success or failure.

When you feel like quitting—reflect. Remember how pepped up you were when you first took the job.

DON'T—take your troubles to work with you. Your firm is paying you for the use of your brains during the work hours.

DO—everything possible to keep yourself feeling fresh and vigorous.

DON'T—act on impulse. The man who does is usually too hard-headed to give up when he finds out he is wrong.

DON'T—procrastinate when you have made a decision.

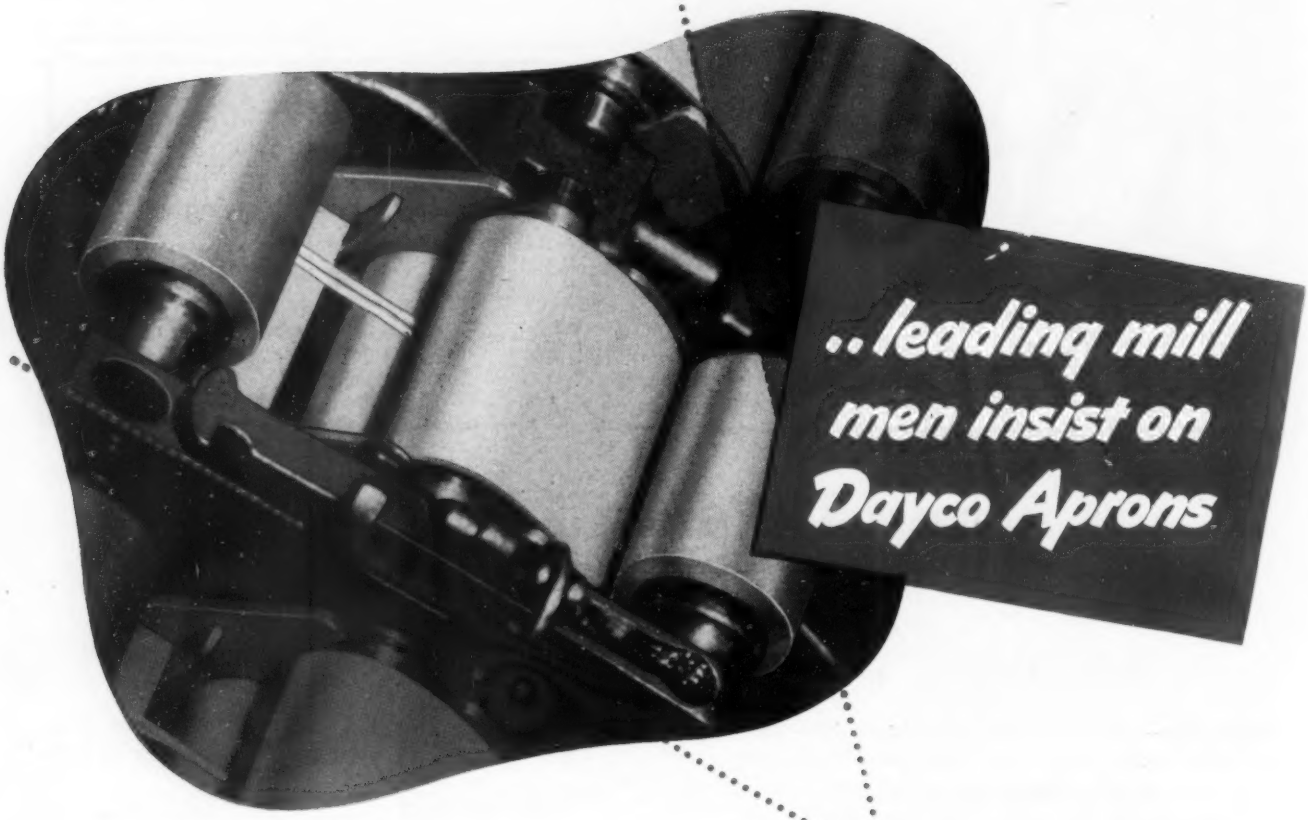
DON'T—be afraid of making a mistake, but be sure you profit by the mistakes you do make.

DON'T—let yourself get into the habit of wasting too much time making decisions on unimportant things, or soon you will not have sufficient time to study important items.

DO—your routine work—then spend the rest of your time concentrating on items that will improve your job or yourself.

DON'T—have a man working for you that you do not know. Converse with him. He may have an idea you can use.

★ **"Dayco aprons show no signs of deterioration such as cracking, splitting, distortion or grooving"**



Spinning room overseers, throughout the textile industry, are insisting more and more that *every frame* in their spinning rooms be equipped with *Dayco* Long Draft Aprons. That's because Daycos last longer, require less attention than other type aprons. Daycos are nondirectional . . . can be put on either way. Important too, is their nonstretch feature that keeps them on the frame when you start up. Because the thickness of Dayco aprons is rigidly controlled to 1/1000's, plus or minus, yarn uniformity is increased as much as 10%, or more. *Furthermore, Daycos retain their original drafting qualities for many, many months of trouble-free service.*

If you aren't using Daycos, it will pay you to put a few to work on your frames now. Write for additional information, or have one of our textile product engineers call on you. He can show you many additional ways to more economical production and better quality yarn.

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Main Sales Office: Woodside Bldg., Greenville, S. C.
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★ **ADDITIONAL ADVANTAGES IN USING DAYCO LONG DRAFT APRONS**

- Greater coefficient of friction
- No inside rib
- Nondirectional
- Will handle cotton, synthetics
- Uniformly flexible from apron to apron
- Don't pick up lint
- Won't curl
- Unaffected by hard ends

Dayton Rubber

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AAF to Purchase Textiles

Streamlined contracts to supply the Army Air Forces with supplies needed now and in the future are being offered southern and southwestern manufacturers as a part of the national security program of dispersion of essential industries, according to a recent announcement by the Army Air Forces Procurement Field Office, Room 206, 1114 Commerce Street, Dallas 2, Texas.

It is reported that a joint meeting of the Army Air Forces with industrialists, manufacturers and shop owners of Texas will be held in Dallas on or about September first and that similar meetings will be held in key cities of all southern and southwestern states, at which the AAF hopes to place contracts for millions of dollars worth of vitally important supplies and equipment as part of its air preparedness program.

Textiles said to be included among the wanted items are cotton ropes and cordage, air crew equipment and supplies, clothes carrying cases or bags, zippered; various other cases or bags, mooring kits, tents, parachute harness and other webbing of all widths, parachute bags of ducking, cotton rags, padding or sound-proofing materials, covers for engines and cockpits, etc., sporting goods, leather and rubber goods of all kinds, cotton and nylon fabrics and cords, etc.

Textile manufacturers are cordially invited to visit Dallas AAF Procurement Field Office and investigate the possibilities of manufacturing various materials and supplies on AAF contract.

ITT Building Program Progressing Rapidly

The building program of the Institute of Textile Technology at Charlottesville, Va., was given substantial impetus recently with a contribution from Callaway Institute, Inc., of LaGrange, Ga., in the sum of $80,000 for the purpose of building and equipping a seminar or auditorium building to be located on the grounds of the Institute at Charlottesville and dedicated to the memory of the late Stuart W. Cramer, according to Ward Delaney, president of the Institute of Textile Technology. A contribution of $20,000 from Callaway Mills, LaGrange, has been designated for use in the same project making a total of $100,000 now available for it, he said.

It is understood that the Institute of Textile Technology has also received from the Association of Cotton Textile Merchants of New York, as individuals, the funds with which to build and equip a technical library building on the grounds of the Institute, to be known as the Merchants Library.

Construction of both these buildings will begin soon.

USDA Reports Results of Cotton Fiber Study

The United States Department of Agriculture has released a booklet on the relation and importance of certain fiber properties of long staple cottons to strength and appearance of combed yarns, and to percentages of manufacturing waste.

This report is the sixth in a series covering a broad study on the relationships of cotton fiber properties to manufacturing performance and quality of manufactured products. The results are reported to be obtained from comprehensive statistical analyses of data representing 150 lots of case-histories,

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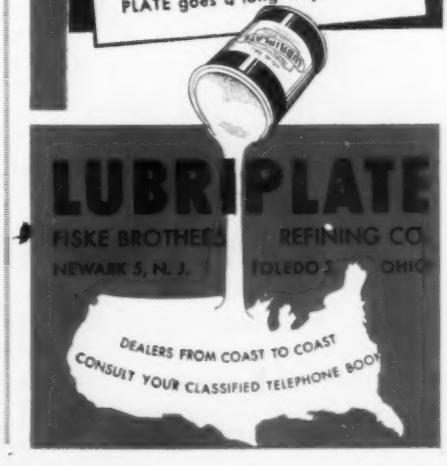

NYLON BRISTLE

JENKINS METLKOR

FURNISHER BRUSHES RECOMMENDED FOR ARIDYE PIGMENT PRINTING

The sales manager of Interchemical Corporation — Textile Colors Division — manufacturers of Aridye pigment colors for textile printing, approves and recommends nylon bristle brushes for use in textile printing, as follows:

"Frankly, we consider brushes with nylon bristles are the best brushes with which to apply pigment colors to print rollers.

"Time and again we have seen the superior results they produce."

JENKINS "METLKOR"* FURNISHERS

have cores of aluminum with stainless steel shafts.

Nylon bristle is wound on the cores with flat copper wire and set in plastic cement by a patented process. Easy to clean and keep clean.

The long-lived nylon bristle when worn is renewable.

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CEDAR GROVE, ESSEX COUNTY, NEW JERSEY

long and extra-long staple cotton (sea island, American Egyptian, and American upland,) grown in the United States, crops of 1941-44.

The findings given in this report relate to strength and appearance of 60s and 100s combed yarn and percentage of picker waste, card waste, and total picker and card waste. The properties of raw cotton that have been considered are as follows: Upper quartile length, coefficient of length variability, fiber strength, fiber fineness, percentage of mature fibers, and grade. Mean fiber length and classer's staple length have been considered in some particulars.

Multiple, partial, and simple correlation analyses have been made for the fiber properties in connection with each of the seven dependent variables. Supplemental analyses on yarn strength have been made. These relate to the separate groups of American upland and sea island cottons included in the mixed series.

Copies of the pamphlet can be obtained from the U. S. Department of Agriculture, Production and Marketing Administration, Cotton Branch, Washington, D. C.

National Guard to Seek a Man a Minute

The greatest recruiting drive in the history of the National Guard is being conducted this fall, according to a recent announcement by the National Guard Bureau. The drive will last for two months, closing on November 16.

The immediate objective for the drive is reported to be the enlistment of 88,888 men. This is one enlistment each minute during the two-month period.

Each of the 48 states, Hawaii, Puerto Rico, and the District of Columbia have been assigned quotas. The state objectives are based on their share of the Guard's ultimate strength of 682,000 officers and men.

A special certificate of commendation will go to all units of the National Guard which reach their full authorized strength during the period of the recruiting drive. At the present time, the average unit has about 40 per cent of its authorized strength.

Phila. Section AATCC to Celebrate 25th Anniversary

The Philadelphia Section of the American Association of Textile Chemists and Colorists has announced that plans are being made to celebrate its silver anniversary with a 25th birthday party to be held on Saturday evening, Nov. 8, 1947, in the main ballroom of the Bellevue Stratford Hotel.

It is contemplated that a cocktail hour will precede the dinner which will be highlighted by entertainment and dancing.

$250,000 Goal Passed in N.E.T.F. Campaign

The $250,000 goal for the 1946-47 campaign of the New England Textile Foundation, 68 South Main St., Providence, R. I., has been exceeded, according to a recent announcement.

This brings to a successful close the first of four annual campaigns to raise $250,000 per year, or a total of $1,000,000. Similar campaigns are planned for the next three years. The money so obtained will be used by the N.E.T.F. to assist New England textile schools and to grant scholarships to deserving students who wish to attend them.

International Textile Show Date and Location Changed

The International Exposition of Textile Machinery, Equipment and Supplies that was scheduled for the Kingsbridge Armory in New York the last week of April, 1948, has been switched to the 71st Regiment Armory, 34th St. and Park Ave., and the date for the exposition has been pushed ahead one week to May 3-7 inclusive of next year, according to a recent announcement by Arthur Tarshis, managing director of the exposition.

Mill Requirements for Cotton Quality

A pamphlet on cotton mill requirements as related to improved cotton quality and marketing practices has been published.

The booklet includes discussion and comments related to research on problems concerning cotton quality, factors influencing cotton fiber properties and manufacturing behavior. Laboratory methods for appraising such character properties as fiber strength, fiber length uniformity, and fiber fineness are mentioned.

More detailed information is related on qualities of cotton required for various types of products and factors determining the quality of cotton consumed. Methods of obtaining qualities of cotton required and trade channels through which mills purchase raw cotton are also comprehensively covered.

The publication was prepared by Francis L. Gerdes and A. Y. Willis Jr., and copies can be procured from the United States Department of Agriculture.

FIRE PREVENTION WEEK
Oct. 5-11, 1947

Every day there are 1,650 fires and 28 deaths caused by fire, according to a recent report by the National Fire Protection Association. 760 of those fires are home fires, 140 store fires, 80 factory fires, 6 church fires, 6 school fires, and 3 hospital fires.

Ignorance and indifference to fire control can be eliminated by the strong light of education just as the clean rays of the sun eradicates germs. It is a matter of statistical record that 90 per cent of all fires are preventable.

Fire Prevention Week gives us a chance to all get together on a national scale and "get in a few extra licks" in the daily battle against fire.

Won't you lend your active support?

You'll find no dusting on fabric with RunRite Plastic Sheaves because RunRites are automatically spaced to prevent one sheave rubbing another. Their smooth, perfectly balanced strap surface guarantees longer life for harness straps. Once installed, RunRites need no further attention for a long life of perfect service.

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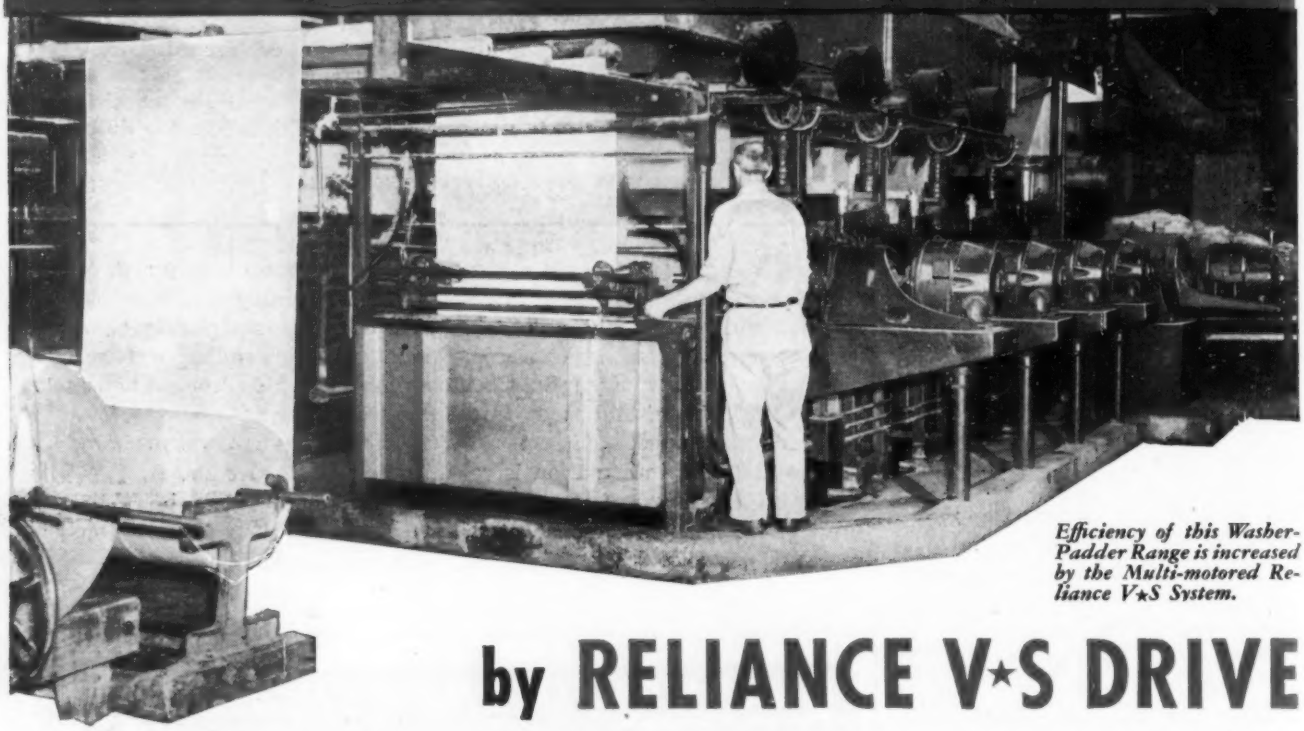
CORRECT SPEED and TENSION

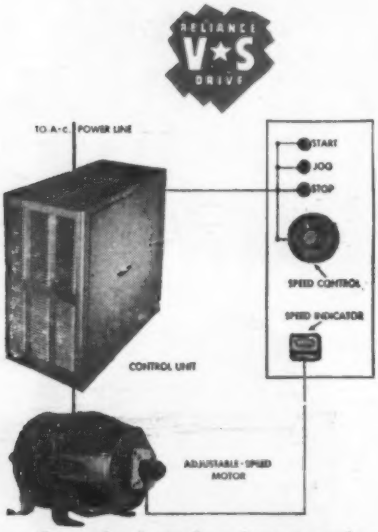
automatically maintained . .



Efficiency of this Washer-Padder Range is increased by the Multi-motored Reliance V★S System.

by RELIANCE V★S DRIVE

Automatic maintenance of the correct speed and tension as material passes through the various sections of a range is only one of many important advantages of Reliance V★S Drive in textile operations. Others which contribute greatly to *faster processing* and *lower costs* include quick, smooth starts and stops and stepless speed changes with automatic or manual control at the machine or from remote stations. V★S, the *All-electric, Adjustable-speed Drive operating from A-c. Circuits,* has a record of paying for itself many times over from savings—in a great variety of textile applications. To investigate the possibilities, write today for Bulletin 311-A or call your nearest Reliance representative.



Conveniently-packaged, space-saving V★S Drives are available from 1 to 200 hp.

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RELIANCE A-C D-C MOTORS

"Motor-Drive is More Than Power"

PERSONAL NOTES

ABOUT MEN YOU KNOW

C. B. WALL, formerly overseer of carding at Cedartown (Ga.) Yarn Mills, Inc., is now assistant superintendent at Berryton Mills, Berryton, Ga.

HENRY A. RUTHERFORD has resigned his position as an official of the National Cotton Council of America to become head of the textile chemistry and dyeing department of the School of Textiles at N. C. State College, Raleigh, N. C. Mr. Rutherford will replace Professor A. H. GRIMSHAW, who asked to be relieved of the duties because of his health. Professor Grimshaw, who has been a member of the college faculty for many years, will continue as a professor in the School of Textiles.

IRVING FROST, former superintendent of dyeing at the Arkwright Corporation, has been employed by the Fall River (Mass.) Dyeing & Finishing Co. as a salesman.

OLIVER G. EDWARDS, former director of research for the Avondale Mills, Sylacauga, Ala., has accepted an appointment to the staff of the Industrial Research Institute of the University of Chattanooga where he will investigate problems for the textile industry. During the past 12 months, Mr. Edwards has been in Germany as a member of the Quadripartite Commission on Textiles which sets the industrial level for postwar Germany.

H. C. ESTES has resigned as plant superintendent of Inman Cotton Mills. He was presented with a 6 hp outboard motor by the mill employees.

J. F. PLEXICO, Carrollton, Ga., has been appointed superintendent of the Linwood Cotton Mill in LaFayette, Ga., replacing T. C. GILES, resigned.

WILLIAM SUMTER has accepted the position of overseer of carding and spinning at Norris Cotton Mill, Catechee, S. C. He was formerly with Woodside Cotton Mills, Greenville, S. C.

W. H. GOSNELL has resigned as assistant superintendent at Beaumont Mfg. Co., Spartanburg, S. C., to accept the position of superintendent of Saxon Mill in that city.

MANUEL RODERIQUES, JR., recently resigned as superintendent of the Amoskeag-Lawrence Mills, Manchester, N. H., has gone to Sao Paulo, Brazil, to be general technical administrator of a new cotton mill in that city.

Mr. Roderiques

JAMES W. MULLINIX has retired as overseer of carding and spinning at Appleton Co., Anderson, S. C. He has been succeeded by ROBERT M. ROSS, former overseer at Norris Cotton Mills, Catechee, S. C.

HALSEY B. LEAVITT, JR., former superintendent of the woolen mill of Fieldcrest Mills, Spray, N. C., has succeeded E. E. SYMS, of Atlanta Woolen Mills, resigned.

A. C. HOLDSWORTH, former vice-president of the Providence (R. I.) Dyeing, Bleaching & Calendering Co., has been named general manager of the Lawrence (Mass.) Print Works, Inc., a division of Aspinook Corp. Mr. Holdsworth succeeds RAYMOND E. CAFFRAY who is now on an extended vacation due to poor health.

C. C. CALLAWAY, JR., treasurer of Crystal Springs Bleachery, Inc., Chickamauga, Ga., has been elected vice-president of the Chattanooga Control of the Controllers Institute of America. The Institute also named M. W. MORRIS, assistant treasurer of E-Z Mills, Inc., Cartersville, Ga., a director. The following executives from the textile industry were elected directors of local controls of the Institute in their respective cities: EDGAR K. FITCH, treasurer of Mount-Vernon-Woodberry Mills, Inc., Baltimore, Md.; EDWARD

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THE ILLUMINATED MAGNIFIER SPOTLIGHTS AS IT MAGNIFIES

EXCELLENT FOR

- counting picks
- laying out textile patterns
- matching colors
- testing stitch length and width on knitted fabrics
- all types of textile inspection

Portable Battery and Electric Models Available with 5, 7, 20, or 40 Power Lenses.

Detachable Textile Counting Plate for use with 5 power models quickly gives 1", ½", ¼", and ⅛" measurements.

5 Power Battery Model with textile plate **$10.35**

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Please send me a free copy of your catalog on Flash-O-Lens Illuminated Magnifier for Textile Inspection.

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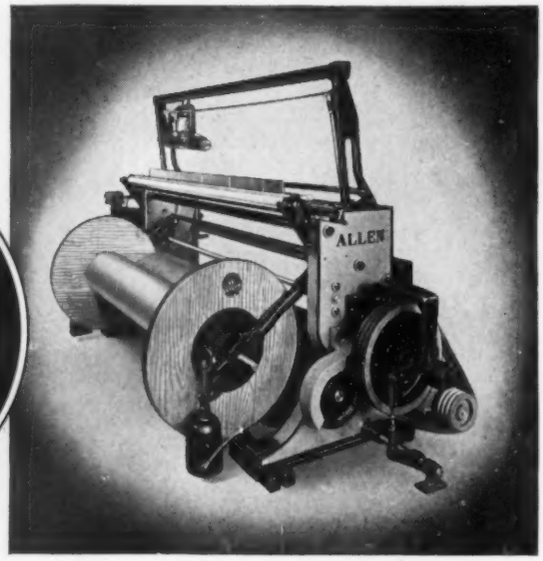
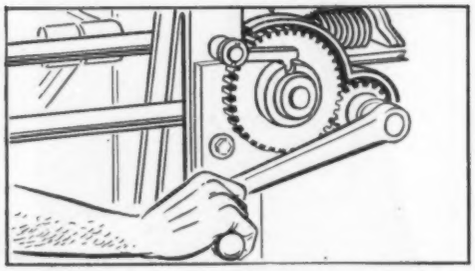
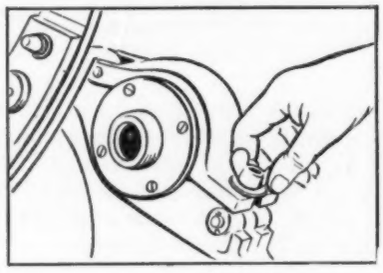


Model "C" Cotton Warper

See how it doffs in 30 seconds





10 SEC A few turns of beam doffer crank depresses ball bearing beam arm and lowers beam to floor.

20 SEC Releasing wing nut frees beam by permitting ball bearing to slip off shaft ends.

1. Speeds up to 700 yards per minute.
2. Electric stop motion.
3. Beam doffing device. (Shown above).
4. Automatic lint cleaner for preventing collection of lint in combs and yarn.
5. All adjustments made on outside of Warper.
6. Adaptable for use with any make of creel.
7. Efficient Braking device.
8. Motor and V-belt drive with silent chain and sprockets.
9. Ball bearings throughout.

Allen KXR Cotton Warper Beams balanced for speed and for running on all makes of Warpers to make a perfect Beam. Good Warps are made on good Beams.

Cotton and Rayon Beam Warpers

Ball Warping Machines

Narrow Fabric Warpers

Intermediate Dresser Stand for Woolen and Worsted Warp Yarns

Expansion Neck Reeds

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Replacement parts for all types of Warping Equipment

Genuine Repair Parts for all makes of Saco-Lowell and Entwistle Warpers

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C. HUNT, West Point Mfg. Co., Boston, Mass., and FRANKLIN R. EHMANN, controller of The Hellwig Dyeing Corp., Philadelphia (re-elected).

F. H. HIGGINS, former superintendent of the Dodge Davis Manufacturing Co., Bristold, N. H., is now superintendent of the former Bower Mill at Monmouth, Me. This plant, formerly located in Lewiston, Maine, was purchased from the Nashua Mfg. Co. by the American Felt Co. some months ago as reported in TEXTILE INDUSTRIES at the time, and the machinery and equipment moved to Monmouth. MAURICE G. PHILLIPS, former assistant superintendent, is now superintendent of Dodge Davis Manufacturing Co., succeeding Mr. Higgins. G. C. BRAINARD is now assistant purchasing agent of Nashua Mfg. Co.

JOSEPH LEAKE, who has been overseer of weaving at the Howard-Arthur Mills, Fall River, Mass., for a ten-year period and acting superintendent for the past six months during the prolonged illness of HERBERT H. READ, JR., is now superintendent following Mr. Read's death.

ROBERT W. BUXTON is now superintendent of the Sangerville Woolen Mills, Sangerville, Me.

EARL L. CLIFFORD has resigned as manager of Uncas Finishing Corp., Mechanicsville, Conn., and has become general manager of Sumter (S. C.) Textile Mills, Inc. As a result, three promotions have been made at the Uncas plant: JAMES D. DUGGAN, former superintendent and assistant manager, became plant manager; JOSEPH C. WORTH is now assistant manager and CHARLES DREW became color superintendent.

L. C. FINLEY, formerly with Mooresville (N. C.) Mills and Hannah Picket Mill No. 2, Rockingham, N. C., has been appointed superintendent of Safie Manufacturing Co., Rockingham. LESTER ADCOCK, overseer of Safie cloth room, has been promoted to assistant superintendent.

Obituaries

ALBERT GEE, retired, 73-year-old Philadelphia hosiery mill executive, died July 20 in the University Hospital, Baltimore, Md.

DAVID OAKES, former president of Thomas Oakes & Co., woolen mills of Bloomfield, N. J., died last July. Mr. Oakes and his brother, George A. Oakes, grandsons of the founder of the Oakes Woolen Mill, operated the

HOW WOULD YOU PRINT THIS PATTERN ON BEMBERG SHEER?

Executives of Supreme Textile Printers, Inc., knew that in printing Bemberg sheers by conventional methods there is always the danger of cracking the fabric. Therefore, to produce this gay, sporting design, they decided to use one of the new low-crock Aridye* Pigment Colors. Here's how they did it.

The fabric was first dyed a chartreuse shade and overprinted with Aridye Black FK 4214 cut 1:1 with Aridye Clear 6130. Then the fabric was merely dried and cured for 3 minutes at 300°F. No ageing, soaping, or other after-treatment was necessary.

Results: An eye-catching print with fine, delicate lines in a rich, bloomy black. No cracking or other damage to the fabric; no impairment of the hand. Excellent fastness to commercial pre-spotting and dry-cleaning.

Because of their many advantages, Aridye Pigment Colors are being used more and more by leading printers of cotton, rayon, and other fabrics. Interchemical technical representatives are trained to help *you* solve your unusual printing problems and improve your everyday printing jobs. Write to Interchemical Corporation—Textile Colors Division—*pioneers in pigment colors for textiles*—P.O. Box 357, Fair Lawn, N.J.

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CHECK THESE EIGHT ADVANTAGES

Sharpness of Mark • Exceptional Fastness to Sunlight
Uniformity of Shade • Fastness to Washing
Bright Colors • Economy
Ease of Application • No Impairment of Hand

Aridye *Pigment colors*

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REDUCES
LOOM STOPS, WARP TYING AND HANDLING 2/3

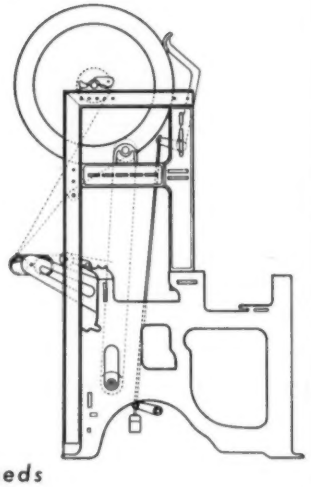
Switch to Bigger Beams for Bigger Profits

Step up slasher and weave room efficiency—cut costly beam handling and expensive machine stops by installing larger beams. You will pay for the change-over with increased production.

If you're now using 20" beams, loom stops for tie-ins will be reduced by over 2/3 when you switch to 36" beams. A change-over from 24" beams to 36" beams cuts stops in half.

We'll be glad to show you how larger beam heads will improve your production schedule. Our expertly machined, high grade heads are mounted on well-seasoned barrels . . . sealed against moisture . . . built for long life.

BIGGER BEAMS ADAPTED TO FIT ANY WEAVE SHED



In weave sheds with narrow alleys bigger beams can be easily installed on top of the looms at little additional expense.

WEST POINT FOUNDRY & MACHINE CO.
(Batson-Cook Company, Owners)
WEST POINT, GEORGIA

mill until 1945, when it was sold to the Crescent Corporation.

JACK M. GLASSENBERG, of Textile Yarn Co., Chicago, Ill., passed away recently.

SAM E. ERVIN, SR., 72, superintendent of the Gonzales (Texas) Cotton Mills, passed away suddenly at his home on June 28.

GEORGE W. WALKER, southern representative for Sterling Ring Traveler Co. for the past 35 years, died recently.

ALONZO G. DUDLEY, founder and president of Climax Hosiery Mill, Athens, Ga., with an interest in the Athens Manufacturing Co., died at his home in Athens on August 3 at the age of 66.

W. C. BRADLEY, 84, chairman of the board of Eagle & Phenix Mills, Inc., died suddenly July 26 of a heart attack. Mr. Bradley was widely known in the textile and other industries. In recent years he gave up active participation in many of the enterprises in which he held interests, but he maintained directorships and served as chairman of the board of several concerns.

J. E. SIRRINE, 74, one of the country's leading engineers, and organizer and senior partner in J. E. Sirrine & Co. of Greenville, S. C., died at his home in Greenville on August 8 following a three-year illness.

STANLEY G. KRAMER, 62, vice-president of Brownhill & Kramer, Inc., hosiery manufacturers, Coudersport, Pa., passed away recently.

F. CRAWFORD FARNSWORTH, 79, a partner in Farnsworth & Farnsworth, textile counselors, died recently.

CLARENCE DANA MOONEY, 69, assistant purchasing agent of Scott & Williams, Inc., died suddenly at his home in Laconia, N. H., recently.

WHAT THE TEXTILE MILLS ARE DOING

Management and employees of the Rock Hill Printing & Finishing Co., a subsidiary of M. Lowenstein & Sons of New York, have been awarded a blue and white Accident Prevention flag by the Liberty Mutual Insurance Company in recognition of the South Carolina firm's 79 per cent reduction in lost time accidents from January, 1945, to April, 1947.

Dwight Mfg. Co., Alabama City, Ala., sheetings, drills, etc., has let contract to Carrier Corp., Syracuse, N. Y., for installation of an air conditioning system in the main mill units, at a cost estimated close to $500,000.

Johnson Cordage Co., Prattville, Ala., has work nearing completion on three one-story buildings at the mill, which will replace those structures destroyed by fire several months ago. New machinery will be installed to increase former capacity.

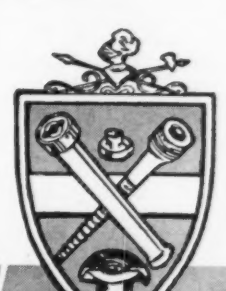
Eagle & Phenix Mills, Columbus, Ga., has been taken over by Reeves Bros., Inc., New York, and will be known as the Fairforest Co., Eagle & Phenix Division. D. Abbott Turner, president, will be the only official of the company who will retire from an executive position.

Newnan (Ga.) Cotton Mills have plans under way for a one-story weaving mill, reported to cost over $400,000, with equipment.

Hollywood Loomcraft Rugs, Inc., Los Angeles, Calif., has leased a one-story building at Winder, Ga., previously used for warehouse service, and will remodel and equip for a branch mill. Equipment and facilities will be provided for the employment of close to 100 persons.

Robinson Thread Co. has been organized with a capital of 1000 shares of stock, no par value, to operate a mill in Worcester, Mass., for the manufacture of thread, yarns, etc. Rowland N. Robinson is president and treasurer.

Midwest Textile Co., recently organized with a capital of $50,000, plans the operation of a mill in Dowagiac, Mich., for the manufacture of a line of textile specialties. Lisle B. Jones is the principal incorporator.



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For Spools and Bobbins

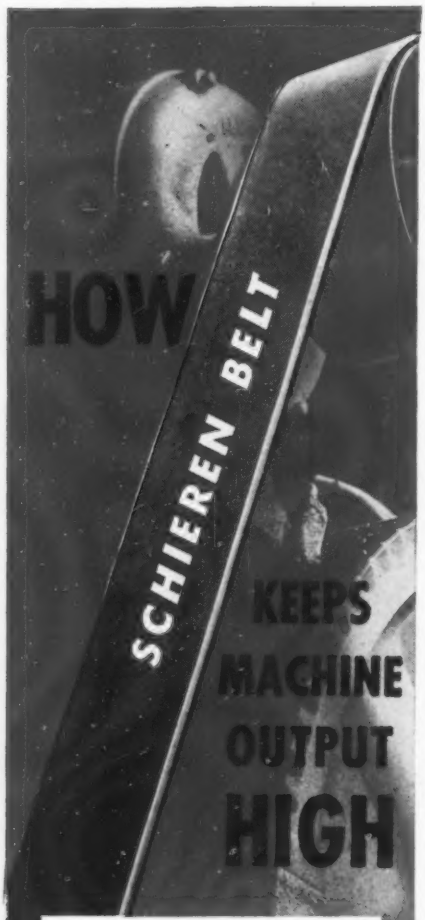
Anderson Shields are dependable protection against chipping, splitting, and breaking of spools, bobbins, and paper caps. Even the most minute details are carefully worked out to make Anderson the highest in precision, the smoothest in finish, the best in performance. The Anderson Emblem is your assurance of the finest shields you can buy.

Insist on Anderson when you order metal shields.

TEXTILE SHIELD CO., INC.

J. N. ANDERSON, Treasurer

LAWRENCE, MASS., U. S. A.



Schieren belt on the pulleys of your machines gives you maximum production power with minimum "time out" for maintenance.

Here's why:

BETTER PULLEY GRIP—MORE RPM — The uniform, clean, full grain surface of Schieren belt assures maximum coefficient of friction — delivers more producing speed and power.

LESS STRETCH—LESS MAINTENANCE — Tests have shown that Schieren belt has less than half the stretch allowable under government specifications. In addition, Schieren belt's higher tensile strength and stronger laps and plies provide greater overload capacity and longer belt life.

To improve and protect your production rates, put Schieren belt on your machine pulleys.

Write for further information on leather belting, packings or leather specialties of all types.

SC-12

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Tanners and Manufacturers Since 1868

Branch Offices in Chicago, Dallas, Denver, Detroit, Lowell, Newark, New York, Philadelphia, Pittsburgh, Salt Lake City

The former Meridian, Miss., mill of Southern Cotton Co., has been dismantled, and machinery and equipment have been shipped to a destination in Brazil, where it will be installed in a native mill.

A recent public auction of machinery and equipment in a mill of the Thomas Oakes & Co., Bloomfield, N. J., woolen and worsted goods, did not bring an amount sufficient to cover an existing mortgage and all tenders have been rejected. Mill property will be held intact until further notice.

Proximity Mfg. Co., cotton goods, has plans for a two-story office building in Greensboro, N. C., to cost about $40,000, and will award erection contract soon.

Morgan Cotton Mills, Inc., Laurel Hill, N. C., tire fabrics, draperies, etc., has plans for a two-story addition to cost about $100,000 with equipment.

National Weaving Co., Lowell, N. C., rayon fabrics, has begun erection of a one-story addition and will install additional high-speed warping and slashing machinery.

Mooresville (N. C.) Cotton Mills, towels, flannels, etc., have awarded contract for the installation of a new air conditioning system in a proposed addition to the mill. The entire program will represent an investment in excess of $1,000,000.

Esther Mill Co., Shelby, N. C., rayon goods, has plans for a one-story addition to cost about $25,000, exclusive of equipment.

North Carolina Finishing Co., Yadkin, N. C., has plans for a one-story addition for warehouse service, with a portion of the structure to be equipped as a laboratory. The cost is reported to be close to $75,000, and erection will begin soon.

Textileather Corp., Toledo, Ohio, has plans maturing for a one-story addition, reported to cost about $400,000, with equipment.

Victor Balata & Textile Belting Co., Easton, Pa., is planning a one-story addition for a large increase in capacity, reported to cost close to $200,000, with equipment.

Prudential Worsted Co., Philadelphia, Pa., has taken over a building at Doylestown, Pa., and will remodel and equip for a new branch mill. The cost is estimated at over $65,000.

Hellwig Silk Dyeing Co., Philadelphia, Pa., has asked bids on a general contract for a one-story addition to be used for storage and distribution. The cost is close to $75,000.

Eastern Tape & Webbing Co. has been chartered with a capital of $50,000, to operate a mill in Central Falls, R. I. Eugene V. Higgins, Providence, R. I., is the principal incorporator.

Recently organized with a capital of $50,000, Kolyn Mills, Inc., has plans for a mill in Crompton, R. I., for the manufacture of cotton and rayon specialties. J. Alden Dooley, East Providence, R. I., is the principal incorporator.

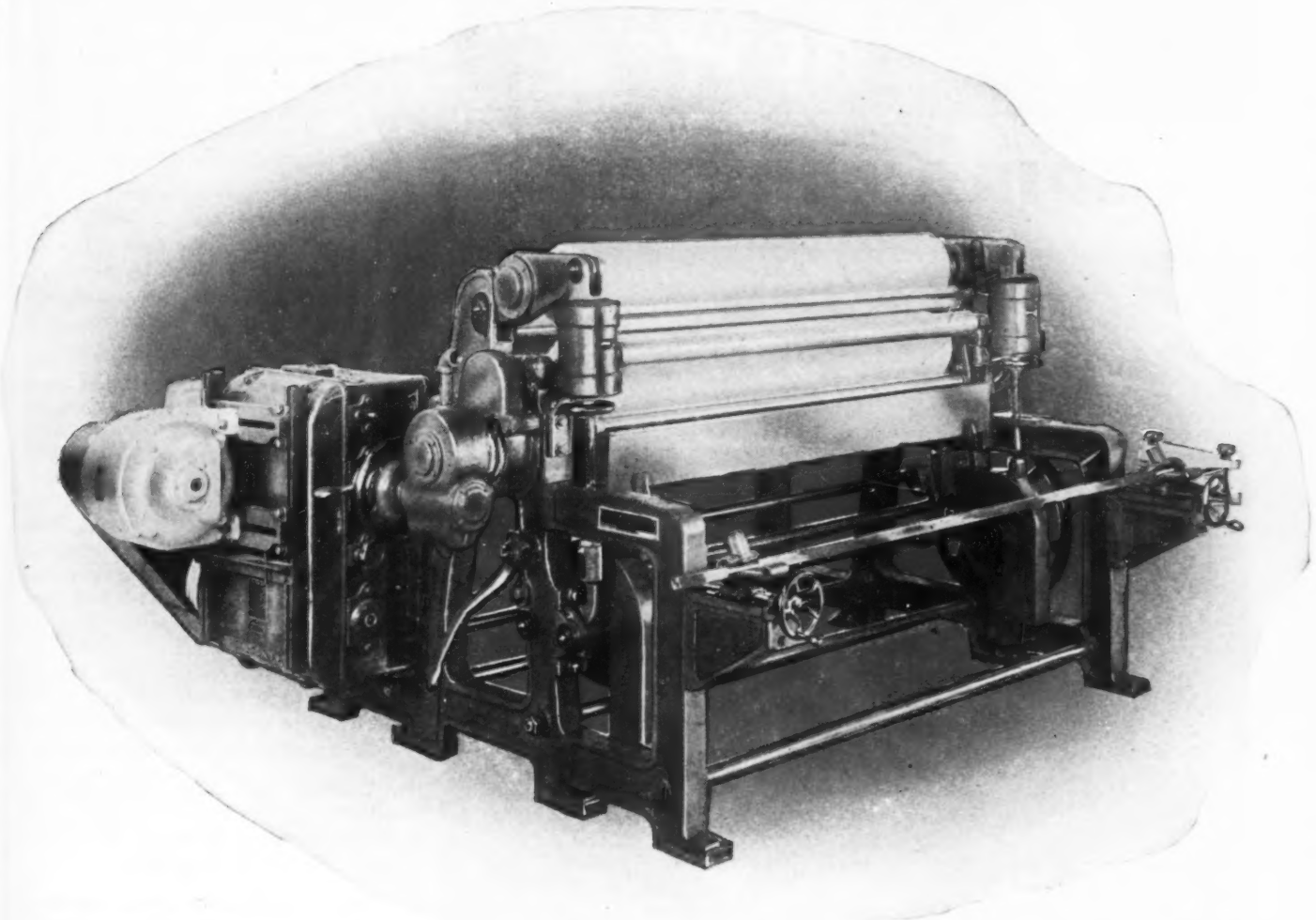
Glenwood Cotton Mills, print cloth, have begun electrification of the mill at Easley, S. C., with an installation of motors and control equipment to replace steam power. The entire program is reported to cost over $100,000.

Hudson Narrow Fabric Mills, cotton goods, have begun an expansion and modernization program at their mill in Easley, S. C., with the installation of new looms and other equipment. The project will be carried out over a period of several weeks, but no estimate of cost has been announced.

New England Fabric Co., Middletown, Conn., has let contract for a one-story top addition to the present mill for increased production.

The Clark Thread Co., Austell, Ga., is reported planning the early establishment of a new dyeing mill at Bainbridge, Ga. No estimate of the cost has been announced. The company has also let contract for a one-story addition to the mill in the Clarkdale district, Austell, at $210,000, exclusive of equipment. Erection is scheduled to be carried out at once.

Riegel Textile Corp., sheetings, drills, etc., will carry out an expansion at the mill in Trion, Ga., and branch plant at Ware Shoals, S. C., during the present year to cost about $2,000,000. Work on the project has already begun. Additional looms have been installed at both mills, with other such equipment scheduled for installation in the future, making a total of about 600 looms. The power house at the Trion mill will be enlarged, and a new boiler unit and accessory equipment to cost about $300,000, will be installed. Approximately one-half of the gross amount noted will be expended at the Ware Shoals plant, including the rayon



V. V. HEAVY DUTY QUETSCH-PADDER

Now is the time to replace obsolete two-roll quetsches with this new quetsch-padder. It is heavier in all respects. For example: it gives you up to three tons pressure at the nip, instead of less than a ton given by old machines.

This new quetsch-padder is used as an individual machine for applying finish or when placed in front of dry boxes, tenters or palmer-tenters for dyeing or other wet treatment.

Instead of lever pressure—pressure system is air, hydraulic or spring, as desired by purchaser. Transmission is variable speed type. Solution pan is made of stainless steel. Rolls are rubber covered and entire machine is designed and manufactured for rugged service.

VAN VLAANDEREN MACHINE COMPANY

370 STRAIGHT ST., PATERSON 3, NEW JERSEY

World's largest manufacturer of machines for processing modern fabrics

Mathews

SPIRAL CHUTES

Engineered to serve Production

Sheet Metal Spirals are ideal for lowering bales, bags, and packaged materials from upper to lower levels quickly and without damage. They can accommodate practically any number of floors and can be arranged with intermediate receive and discharge stations, as required. Spirals can be installed outside the building, as illustrated above, or inside the building. They take up very little floor space and are frequently installed in existing shafts or wells. Intake and outlet points are fully protected by fire doors which are controlled by fusible links. There is a Mathews Engineer operating in your vicinity. Ask him about spiral chutes, and the many other types of Mathews Conveyers which are engineered to serve production. Write or wire today.

MATHEWS CONVEYER COMPANY
ELLWOOD CITY, PENNSYLVANIA
SAN FRANCISCO, CAL. • PORT HOPE, ONT.
ENGINEERING OFFICES IN PRINCIPAL CITIES

finishing division, where new buildings will be erected and drying and other machinery installed.

Channell Textile Co., Chicago, Ill., has plans for the rebuilding of a portion of the plant recently damaged by fire at a loss reported to be over $40,000, including equipment.

Mount Vernon-Woodberry Mills, Inc., Baltimore, Md., cotton ducks, drills, twills, etc., is converting three buildings at the plant for the production of synthetic yarns and fabrics, and will install equipment for a large output in that line.

Herzl Textile Dyers, Inc., has been organized with a capital of 200 shares of stock, no par value, to operate a textile dyeing and finishing plant in New York, N. Y.

Asheboro (N. C.) Weaving Mill, recently organized, has let general contract for a one-story rayon weaving mill, on a site near this city. About 200 looms will be installed for initial operations, later to be increased. An air conditioning system will also be installed. The cost is reported to be over $160,000. Britt Armfield is vice-president of the company.

Carlton Yarn Mills, Inc., Cherryville, N. C., has plans for a one-story addition, estimated to cost about $50,000, exclusive of equipment.

Plans are maturing for a one-story addition for expansion in the throwing department of the Cascade Rayon Mills, Mooresville, N. C. The cost is reported to be over $50,000, with equipment.

Hardwick & Magee Co., Philadelphia, Pa., rugs and carpets, has plans for a multistory building at the plant. No estimate of the cost has been announced. Bids have been asked for a structural steel framing and award will be made soon.

Woonsocket (R. I.) Garnetting Co., recently incorporated with a capital of 600 shares of stock, no par value, plans the operation of a mill in Woonsocket. B. M. Murray, Woonsocket, is principal incorporator.

Premier Thread Co., Central Falls, R. I., has purchased a one-story factory in Pawtucket, R. I., and will remodel and equip for a new branch mill.

Gluck Mills, Anderson, S. C., combed lawns, organdies, etc., has plans maturing for a one-story addition, to be equipped as a gymnasium for the employees.

Central Franklin Process Co., Chat-

tanooga, Tenn., colored cotton and wool yarns, has let general contract for a one-story addition, reported to cost about $75,000, with equipment.

Beaumont Mills have honored 299 veteran employees with continuous service records ranging from five to 42 years.

Leaders of the seventh annual statewide textile safety contest sponsored by the State Department of Industrial Relations and the Alabama Cotton Manufacturers Association, at the end of the first six months are reported to be: Huntsville Mfg. Co., first in the weaving and spinning division; Tallassee Mills, second; and Russell Mfg. Co., third. Among the spinning mills, the Linen Thread Co. was ranked first; Standard-Coosa-Thatcher Co., second; and Boaz Mills Inc., third.

Waucantuck Mills, Uxbridge, Mass., are planning a one-story cement block addition to be used for wool blending and mixing.

Textile Mills Co. of Chicago and New York, manufacturers of textile and plastic household utilities, have moved the central plant to a new million dollar finishing plant and office building in Chicago. John H. Niebuhr, former sales manager, has assumed the post of vice-president in charge of sales.

Cheraw Weaving Mills, Inc., has purchased a building in Cheraw, S. C., and will manufacture rayon print cloth.

Joanna Cotton Mills, Goldville, S. C., have honored more than 400 employees with lapel buttons, rings or gold watches for service of 10 years or more.

Armtex Spinning Co., Inc., Pawtucket, R. I., recently formed by Emil Benoit, formerly with the Chaberray Mfg. Co. of Woonsocket, R. I., is now in full production on the spinning of cotton, worsted and hair blend yarns on the cotton system.

The Shelton Looms Service Club of Sidney Blumenthal & Co., Inc., at a recent meeting in Shelton, Conn., presented 26 members with gold watches in recognition of 35 years of service. It is reported that 44 employees qualified for membership this year, having reached 20 years of service, making the active list a total of 398 employees.

Extension of the manufacturing operations of Textron, Inc., into Great Britain through the acquisition of The Mills Equipment Company, Ltd., of London, has been recommended by Textron directors. Principal products of The Mills Equipment Co. at present consist of commercial fabrics, handbags and other containers from narrow webbing.

Construction of a new rayon weaving plant, to be known as the Asheboro Weaving Company, is under way, and will cost an estimated $150,000, and contain 200 looms. The initial unit is being constructed by C. C. Cranford, Asheboro hosiery manufacturer, for Britt Armfield, former Burlington Mills executive who recently joined William Klopman and Sons. Mr. Armfield is vice-president of the new plant.

General offices and operations of LaFrance Industries, Inc., will be hereafter directed in Anderson County, S. C., having moved from Philadelphia. The move is being made to direct more closely the operations of Pendleton Mfg. Co., and to eliminate unnecessary duplication of personnel.

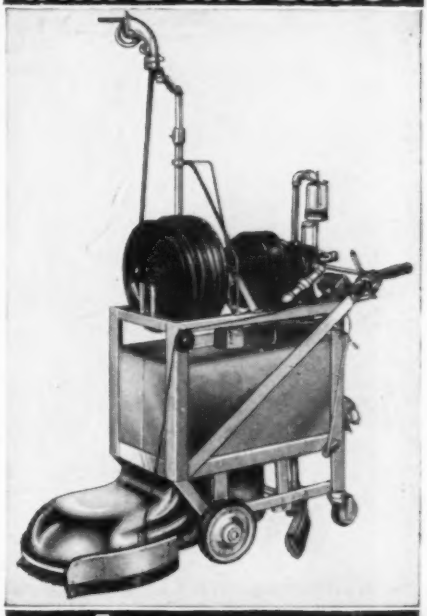
The Franklin Finishing Co. and Putnam Textile Printers, both new plants, will begin operations soon. The Franklin firm will occupy the site formerly housing the Crew Piece Dye Works in Paterson, N. J. Putnam will be located in Cold Springs, N. Y.

The hydroelectric plant in Lowell, Mass., which the Newmarket Company, rayons, has leased for several years, was purchased last month by them for an undisclosed amount.

Nashua (N. H.) Mills, sheetings, blankets, cotton flannels, etc., an interest of Textron, Inc., are planning for consolidation of local mills into three main production units. Machinery and equipment from the main mill, including about 50,000 spindles and auxiliary facilities, will be removed to a mill of the parent company in the South. Units to be retained at Nashua include the Jackson Mills, Mills No. 5 and 6, and present dyeing and finishing plant.

Harmony Grove Mills, Commerce, Ga., sheetings, drills, etc., have let general contract to Fennell Construction Co., Gainesville, Ga., for a new warehouse at the mill. Cost is estimated at over $100,000, and work will begin soon.

CLEAN FLOORS
in 1/2 the Time with 1/2 the Labor



The LAWLOR 20-D
is 2 Machines in 1
- Scrubs Floors Evenly
- Removes Dirty Water

One operator works the easy controls. Clean water is fed from one tank upon the soaped floor which is then scrubbed with a 19" diameter revolving brush. Behind it a rubber squeegee mops up the dirty water which is vacuum pumped into a second tank.

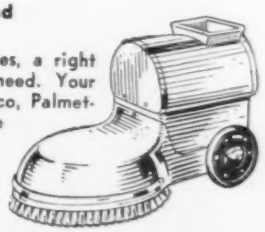
The Lawlor 20-D is just the machine for large floor areas. Only 22" wide, it can be used in congested places, around machines, counters and desks. Available for either AC or DC current.

Write for new catalog giving description of the Lawlor 20-D and complete line.

MOP WRINGERS
All steel with perforated rolls. Easy foot-lever operation. Made for one or two pails.

MOPPING TANKS
Heavy galvanized steel with welded seams. Two compartments, each with shut-off. Foot pressure wringers. 30 or 60-gallon capacity.

SCRUBBERS and POLISHERS
12 different styles, a right size for every need. Your choice of Tampico, Palmetto or Steel Wire brushes.



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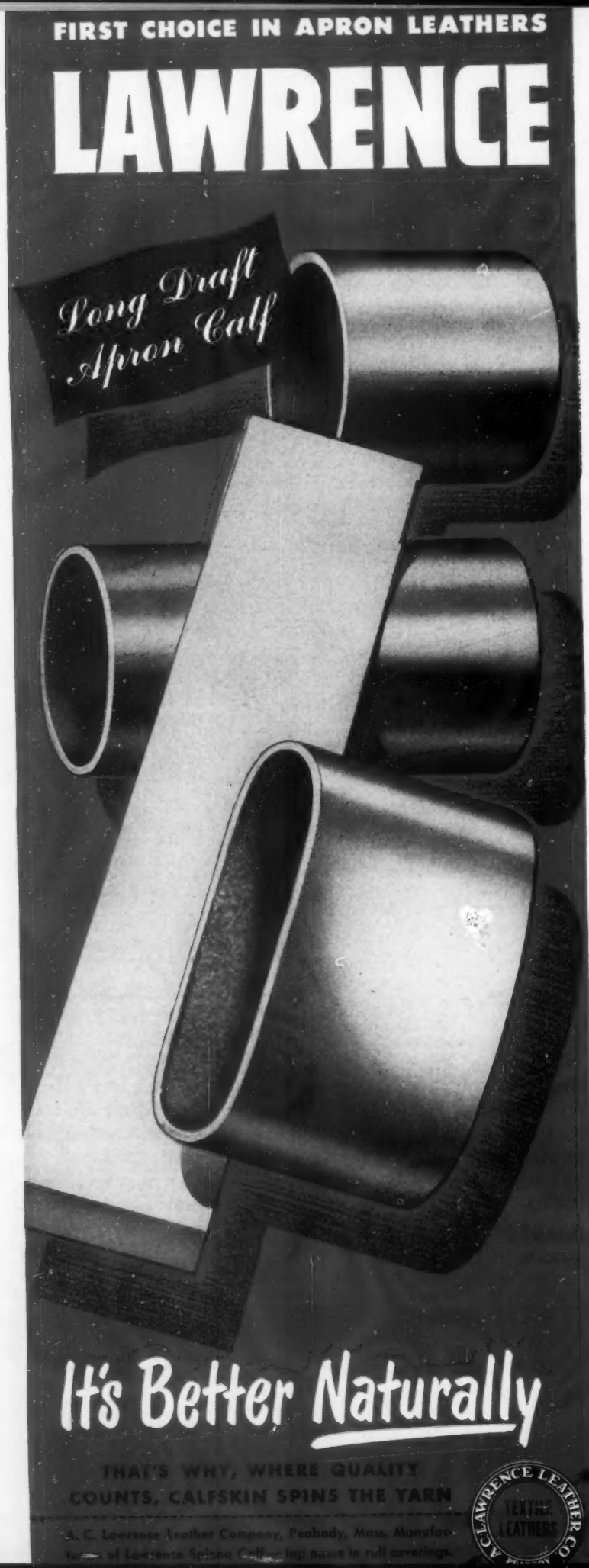
S. C. LAWLOR CO.
Makers of Quality Equipment for 50 Years
121 N. Aberdeen St., Chicago 7, Ill.


FIRST CHOICE IN APRON LEATHERS
LAWRENCE
Long Draft Apron Calf
It's Better Naturally
THAT'S WHY, WHERE QUALITY COUNTS, CALFSKIN SPINS THE YARN
A. C. Lawrence Leather Company, Peabody, Mass. Manufac-
of Lawrence Spring Calf—top name in roll coverings.
A.C. LAWRENCE LEATHER CO.
TEXTILE LEATHERS

NEW

PUBLICATIONS

OF TEXTILE INTEREST

The Felters Company, 210 South Street, Boston 11, Mass. A booklet concerning this company's exclusive product, Unisorb, a material developed for simplifying the anchoring of machines on all types of floors and for controlling transmitted vibration and noise.

Bradley Washfountain Co., N. 22nd and W. Michigan Sts., Milwaukee, Wis. A 24-page catalog No. 4701 which presents the complete line of Bradley washfountains, multistall showers and drinking fountains. Specification data and washroom planning suggestions are included, and advantages of improved sanitation with reductions in maintenance and installation costs are explained.

Associated Factory Mutual Fire Insurance Companies, 184 High Street, Boston 10, Mass. The 1947 edition of "Approved Equipment for Industrial Fire Protection." The new edition lists not only the names of manufacturers and the specific devices which have been tested and approved by the Factory Mutual laboratories, but also contains typical illustrations and valuable engineering data and recommendations on the use of equipment. Copies are available to properties insured in the Factory Mutual Companies free of charge. The booklet is available to others by remitting $2.00.

Diehl Manufacturing Company, Somerville, N. J. Catalog No. 46 illustrating and describing Diehl electric motors, generators, and ventilating and exhaust fans.

Talk-A-Phone Co., 1512 So. Pulaski Road, Chicago 23, Ill. Twelve-page catalog describing in detail all of the Talk-A-Phone models.

B. B. Chemical Co., 784 Memorial Drive, Cambridge, Mass. Bulletin entitled "Adhesive Facts" containing information for laboratory technicians, designers and production men about rubber-base and resin-base adhesives.

Cochrane Corporation, 17th St. and Allegheny Ave., Philadelphia 32, Pa. Three lines of open heaters for direct-contact heating of boiler feed and industrial process waters with available exhaust or live steam are described in Publication 4091.

Allis-Chalmers Mfg. Co., Milwaukee 1, Wis. Bulletin 28B6611 describ-

ing with diagrams the essential function of a hot process water conditioning system. Included is a description of the equipment and an explanation of what it is designed to do, together with the mechanism of its operation.

Barber-Colman Company, Rockford, Ill. Bulletin F-3054 which describes the Barber-Colman Temchron, the completely electronic time-temperature cycle controller which was designed specifically for control of cooking size in a slasher room, but may be applied to other industrial cooking processes. Also a leaflet on the Barber-Colman line voltage unit heater thermostat.

Stonhard Company, 401 North Broad Street, Philadelpia 8, Pa. Handbook entitled "Over the Rough Spots," which provides the answers to more than a hundred problems inherent in the maintenance and construction of all types of industrial buildings.

The Supreme Knitting Machine Co., Inc., 105 Johnson Ave., Brooklyn 6, N. Y. A bulletin describing the Supreme Model IC Lay-In Coating Machine.

The Bristol Company, Waterbury, Conn. Bulletin No. T835 containing information on its recently announced line of Series 500 recording thermometers and gauges.

Armour and Company, 1355 West 31st St., Chicago, Ill. Technical bulletin entitled "The Handling, Sampling and Testing of Fatty Acids," which covers storing fatty acids; pumping fatty acids; process equipment; standard sampling methods and equipment; testing fatty acids; and tests commonly used and their meanings.

The Bauer Bros. Co., 1790 Sheridan Ave., Springfield, Ohio. Bulletin M-3 which illustrates and describes Triple-Air-Gap and Single-Air-Gap Magnetic Separators for spouts and chutes; Portable Magnetic Separators for conveyor belts and picking tables.

The B. F. Goodrich Company, Akron, Ohio. A folder giving technical information on the physical properties of this company's Permaproof Series 200 flameproof compounds which are resistant to laundering and dry cleaning. Also a catalog leaflet on this company's light duty V-belts.

Solvay Sales Corporation, 40 Rector Street, New York 8, N. Y. Technical and Engineering Service Bulletin No. 11, entitled "Water Analysis" on the

"RINGMASTERS"

of

SPINNING

and

TWISTING

Familiar to mill men everywhere, in or out of their blue tin, these travelers are made by Dary methods and to Dary standards for every count and twist of yarn.

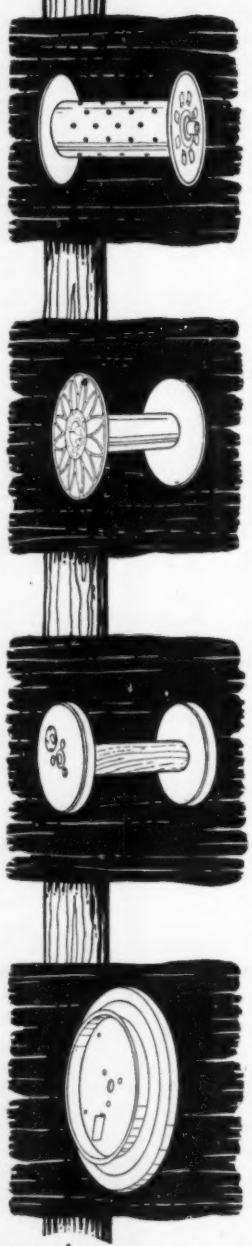
Dary Dependability is more than a phrase to remember. It is a truth that has been experienced by many spinners and twisters. They know Dary means top performance at maximum spindle speeds because of the better wearability and constant uniformity of weight of Dary Ring Travelers.

Call in the friendly Dary Representative nearest you. He can explain more fully and show you clearly how and why the Dary Ring Traveler is a textile industry "ringmaster."

PROCESSED
SYMBOL OF
SUPERIORITY

THE DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS
JOHN E. HUMPHRIES, BOX 843, GREENVILLE, S. C.
JOHN H. O'NEILL, BOX 720, ATLANTA, GA.
H. REID LOCKMAN, BOX 515, SPARTANBURG, S. C.

HUBBARD SPOOLS
and
Related Products



STAINLESS STEEL BOBBINS

Provide extreme strength and balance. Stainless steel construction eliminates problems of corrosion and staining. Designed for steaming and similar silk and rayon processing operations.

MAGNESIUM ALLOY WARP BEAMS

The best in quality construction regardless of price. Thirty-five years of specialization in spool manufacture result in warp beams with every quality for better, lower-cost production. Warp beams made of all-steel also available.

WOOD AND METAL JUTE BOBBINS

Resin bonded plywood head construction, metal bound with steel tire provides overall strength equalled only by toughest steel. Tire protects against chipping, burring, and warping. Available in a range of standard sizes.

LOOM BEAM HEADS

Balanced, relatively light-weight construction assures better operation and easier handling. Resin bonded plywood, metal bound with steel tire results in head of extreme strength.

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1627 CARROLL AVENUE
CHICAGO 12, ILLINOIS

to improve performance
to lower your costs . . . . .

WRITE FOR COMPLETE INFORMATION

Hubbard

Since 1912 Manufacturers of Spools and Related Products

analysis of municipal and industrial water.

The International Nickel Company, 67 Wall Street, New York 5, N. Y. Booklet on the materials required for the metal-arc, oxy-acetylene and submerged melt welding of nickel and the high nickel alloys.

Liquid Conditioning Corp., 114 East Price St., Linden, N. J. A bulletin explaining developments of ion exchange as a unit operation in the chemical process industries.

Management's Gain

(*Continued from page* 100)

operation in that plant. During the recent war I had the privilege of serving as one of the special agents for the National Committee for Conservation of Manpower in War Industries. My work in this connection made it possible for me to visit many industrial plants and it did not take long for me to decide whether or not management had been sold on safety. Once inside the plant, the appearance of the floors, aisles, and the arrangement of the stock soon told me the story. Where attention has been given to safety, one can count on improved appearance within the plant. Good housekeeping is certainly a gain that management has received from their accident prevention program.

Aids Reputation

A good safety record in an industrial plant creates a favorable impression on everyone. Families choosing a community for a home think of safety for their children—safe playgrounds and safe crossings. Civic leaders work to do an outstanding job in making their cities safe. And, men and women like to work for a company that considers safety number One in importance.

From the viewpoint of general management, accident prevention work in a given plant assures less human suffering; increased production and efficiency, decreased costs and better business; a decreased amount of complaints and worries from the employees; and a better company reputation. Safety pays large dividends in many, many ways—both to the large and to the small companies.

ONYX IONICS

Newsworthy items for textile technologists and production men

September, 1947

For a Durable Crush-Proof Finish on all Types of Rayon and Cellulose Fabrics

NEW DEVELOPMENTS

For Further Details Write Onyx

Need an Auxiliary Detergent to Combat Hard Water? Investigate Neutronyx 330—the ***non-ionic*** surface-active agent with outstanding emulsifying, dispersing and detergent characteristics. No. 63

•

For Dull, Soft Shades on Light and Medium Colors Onyx Dullatone CA is particularly effective. This cation-active dispersible titanium dioxide is highly valuable in dulling and softening all types of rayon, acetate and nylon piece goods. No. 64

•

Eternalure – the Dependable Finish for Nylons—imparts snag resistance and body while tightening and clarifying the stitch. Easy to use without changes in equipment and operations. Eternalure insures easy handling after boarding and materially reduces pull threads. No. 65

•

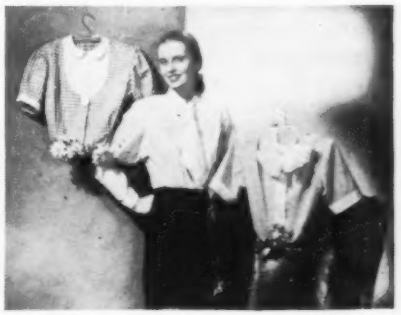
Durable, Low Cost Water Repellency on Rayon-Cotton, Acetate-Cotton and many all Rayon and Acetate constructions is insured by the use of Repel-O-Tex D3 and D4. These complementary materials also provide effective repellency of considerable durability on other textiles. No. 66

•

Dry Cleaning and Laundry-Resistant Moth Proofing is obtained by using cation-active quaternaries Imularv P (used in water solution) or Imularv S (used in organic solvents. No. 67

Onyx NCF Paste is a urea-formaldehyde condensation product with a broad range of usefulness in treating all types of cellulose fabrics. Used principally for crush-proofing, NCF Paste also provides interesting variations in "springy" hands. It can be most effectively used to reduce shrinkage in spun rayon fabrics. Another interesting application is for insolubilizing certain protein finishes for fabrics. All these effects are *durable.* NCF Paste is usually applied in the mangle or padder. The fabric should be fully impregnated with the NCF solution at recommended concentration, and then squeezed between the rolls to obtain a retention by weight of from 75 to 100% on the weight of the goods.

In providing crush resistance where a high concentration is used, pressure on the pad or mangle should be from 3-5 tons, in order to insure proper penetration and to prevent too high a concentration of surface deposits.



After drying on the tenter frame or in the dry box, goods are cured by a 3-5 minute bake at 310-325°F.

For complete data on NCF Paste, write for Technical Bulletin 8-T.

For Permanency in Softening . . . Onyxsan LG

Onyxsan LG is distinctive in the durability of the finish it imparts in the unusually smooth, "drapey" hand it provides. Cationic softening with Onyxsan LG gives you a *permanent* effect on all types of cotton, rayon, acetate and bemberg textiles. It also gives hand of excellent pliability and desirable durability to aralac, silk, wool and mixed constructions of these fibers.

The finish Onyxsan LG produces is due to properties produced within the yarn. It is substantive to textile fibers, acting like a dyestuff and making itself a part of the fiber.

Easy to apply in print washer, jig, dye beck, quetsch or starch mangle, Onyxsan LG requires very small quantities to produce its characteristic effects. For complete data, write for Technical Bulletin 9-T.

A Much Superior Sulfonated Tallow

Onyx Stearo Glyceryl Sulfate N has a much higher SO_3 content than ordinary sulfonated tallows. It has a much greater resistance to hard water and electrolytes. It is also much more readily soluble. Widely used as a lubricant and softening agent, Stearo Glyceryl Sulfate N offers outstanding resistance to yellowing and rancidity in treated fabrics.

If you are interested in improved softening and plasticizing effects on cotton or rayon, warp size lubrication, protective action against alkali damage or improved body and finish, write for Technical Bulletin 12-T.

onyx

Onyx Oil & Chemical Company

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In Canada: Onyx Oil & Chemical Co., Ltd. Montreal, Toronto, St. Johns, Que.

For Export: Onyx International Jersey City 2, N. J.

SUPPLIERS' NEWS

WHAT THEY ARE DOING

Harry B. Garden, Macon, Ga., has been appointed professor of synthetic fibers and becomes the first man to fill the Burlington Mills professorship in the School of Textiles at North Carolina State College. Professor Garden came from the American Viscose Corporation where he was assistant to the general manufacturing manager for rayon mill operation. W. Aldine Thomason, Jr., Charlotte, N. C., has been appointed professor in the yarn manufacturing department of this school. Professor Thomason was formerly associated with the Dan River Mills, Inc., Danville, Va., as a technical advisor.

Stewart-Warner Corporation has selected Gustave Treffeisen as sales manager of the Alemite distribution division, succeeding Charles I. Kraus. Mr. Treffeisen was formerly assistant to Mr. Kraus, who has become Alemite distributor in the Minneapolis territory.

Dr. Ralph T. K. Cornwell, director of research, Sylvania division, American Viscose Corp., has moved from Fredericksburg, Va., to Marcus Hook, Pa., where the research department of Sylvania division will be established.

Mr. Davis

Dr. Cornwell

Arthur S. Davis, former quality engineer of the Barbour Mills, Brockton, Mass., has joined the staff of the Procter & Gamble Co., in the textile research department of the chemical division.

Willis F. Harrington has resigned as a vice-president of E. I. du Pont de Nemours & Co. and as a member of the executive committee effective last August 1. J. Warren Kinsman, general manager of the company's fabrics and finishes department, and a member of the board, was made a vice-president and was designated as a member of the executive committee replacing Mr. Harrington. Mr. Harrington will continue to serve as a member of the board. Elgin S. Nickerson, former assistant general manager, succeeds Mr. Kinsman as general manager.

Owens-Corning Fiberglas Corp. has announced the appointment of P. J. Fluge as manager of the yarns division. Prior to his new assignment, Mr. Fluge served as administrative assistant to the vice-president in charge of sales.

Louis P. Batson has resigned his position as general manager of Mountain City Foundry and Machine Co. and Hunt Loom Co., of Greenville, S. C. His future plans have not been announced.

Robert J. Boes, former research chemist with the Minnesota and Ontario Paper Co., International Falls, Minn., has joined the staff of the Institute of Textile Technology to work in the division of chemical engineering.

The Southern Shuttles Division of Steel Heddle Mfg. Co. has constructed a two-story concrete structure, designed and fitted for storage space. It is located in the immediate vicinity of their main shuttle plant in Greenville, S. C.

The Marquette Metal Products Co., Cleveland, Ohio, has added two new sales representatives to the staff. William P. Russell, Atlanta, Ga., is now representing this company in Alabama and Georgia; and M. O. Thompson, Boston, Mass., is handling the line in the New England territory.

The American Rolling Mill Co., Middleton, Ohio, has announced the appointment of J. M. Tull Metal & Supply Co., Inc., Atlanta, Ga., as distributors for their complete line of stainless steel sheets, plates, bars, wire and rolled stainless steel angles.

Carbomatic Corporation, infra-red radiant heat generators, is removing its company headquarters from 117 West 63rd Street, Manhattan, to its own building in the Long Island City section of New York City.

J. M. Johnson, formerly in charge

PROVEN!
IN OVER 500 MILLS

EXTINGUISH TEXTILE FIRES WITHOUT WATER DAMAGE!

"Using ALL-OUT dry chemical"
SPEED PLUS PROTECTION

The ALL-OUT fire extinguisher has proven outstandingly effective on fires occurring on Pickers, Cards, Slubbers, Roving, Spinning and Weaving. The dry chemical discharged quickly smothers flaming surfaces and fireproofs fibers not already ignited.

and Greater Economy too!

"ALL-OUT" requires no costly recharging equipment. CO_2 cylinders can be recharged in your own plant without pressure pumps, and replaced without special tools at the scene of fire. And because "ALL-OUT" Dry Chemical will not freeze, evaporate, or harden, it is always free-flowing and does not deteriorate.

Write today for folder

GET THE FACTS, ask your local distributor for an instructive demonstration.

APPROVED
Underwriters' Laboratories
Factory Mutual Laboratories

Immediate Delivery
And No Increase In Price.

ALL-OUT MANUFACTURING CORP.
"Fatal to Flame"
2 PARK AVE., NEW YORK, N. Y.

of sales and a veteran of nearly 20 years in the electric truck field, has been appointed assistant sales manager of Automatic Transportation Co., Chicago, Ill.

General contracts for the construction of two buildings to be part of the new technical products plant at Hammond, Ind., have been awarded by Swift & Company. One building will house the offices, laboratory, shipping facilities, and some processing. In the other, equipment for the manufacture of industrial oils will be installed.

In order to correlate the sales activities of the Columbia chemical division of Pittsburgh Plate Glass Co. and the Southern Alkali Corp., a subsidiary of Pittsburgh, W. I. Galliher has been appointed executive sales manager of both units. Mr. Galliher will maintain his headquarters at Fifth Avenue and Bellefied St., Pittsburgh, Pa.

Mr. Galliher

Mrs. Buchanan

Mrs. Helen Gilligan Buchanan, former Broadway musical comedy star, has joined the New England sales staff of the Hart Products Corp., assuming the position of her late husband, Raymond Buchanan. Among the Broadway successes Mrs. Buchanan had leading roles in were "Hold Everything," "Greenwich Village Follies," "Strike Up the Band," and Noel Coward's "Private Lives."

Appointed as regional sales managers of the pigment department, Calco Chemical Division, American Cyanamid Co., are E. Carling, New York office; S. F. Dimlich, Cleveland, Ohio, office, and L. C. Green in San Francisco.

The United States Testing Company, Inc., whose main laboratories are at Hoboken, N. J., has announced that it has installed a quality control and testing laboratory in the plants of the Stowe Cotton Mills and Pharr Worsted Mills, Inc., at McAdenville, N. C. These laboratories are equipped

. . . avoid hazards by
DRY CLEANING
Your FLOORS with the
TENNANT System

If you've had accidents, reduced worker efficiency and slumps in morale due to slippery, oily floors . . . then here's a proved, practical answer: *fast, mechanized DRY-cleaning with the Tennant System.*

As hundreds of mills know from experience, the Tennant System eliminates scrubbing and its *hazards . . . keeps* your floors clean, bright and dry . . . costs *less* to use.

Tennant Floor Machines are available in various sizes for 8", 12" and 16" drum accessories.

The way to finer floors
TENNANT
Floor Maintenance System

The Tennant System
ENDS SCRUBBING
and can be used throughout your mill.

The TENNANT System

1. RESTORES! Brings your dark, oil-soaked floor back to life by removing rough, grimy topwood fibers. Provides a dry, sound, vigorous surface.

2. HARDENS! Fast, effective sealing process fills, binds and hardens floor surface. Increases wear-resistance, durability. Resists soilage.

3. DRY CLEANS, eliminates scrubbing! Saves hours of hard work and cuts cleaning costs. Makes floors extra-bright, clean, smooth. You'll be amazed at the results!

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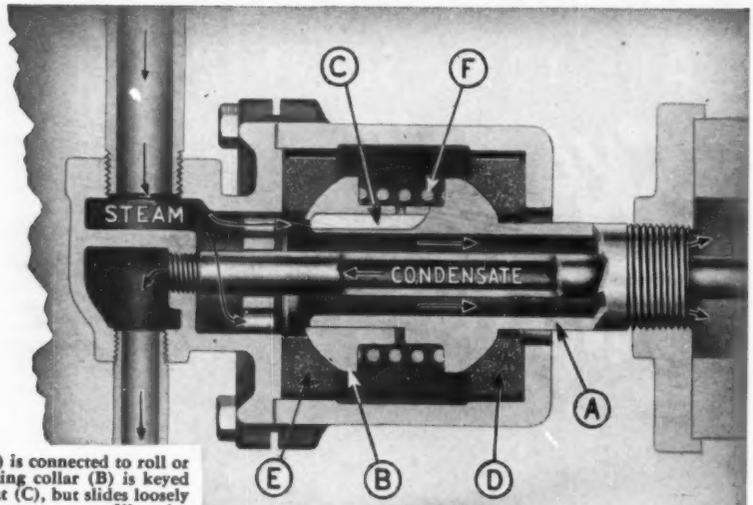
G. H. TENNANT CO.
2585 N. 2 St., Minneapolis 11, Minn.

Without obligation please send Bulletins describing the Tennant System; also photos, comments from mills, performance data, etc. *What mills in our vicinity use the Tennant System?*

Name_____
Address_____
City_____ State_____
☐ Cotton ☐ Woolen ☐ Silk-Rayon
☐ Knitting ☐ Finishing



Nipple (A) is connected to roll or drum. Sliding collar (B) is keyed to nipple at (C), but slides loosely over it so pressure can fill entire housing. This pressure becomes the sealing force, by pressing seal ring (D) tightly against nipple. Both seal ring and bearing ring (E) are of special carbon-graphite, which eliminates oiling and packing. Spring (F) is for initial seating only. Type B Joint illustrated; other types, sizes for all needs.

...it's the biggest little trouble-saver in the mill...

In terms of physical size alone, the Johnson Joint could hardly be called big machinery. But in its ability to save time and trouble, and promote plant efficiency, its stature approaches anything the industry has ever seen.

The Johnson Joint was designed to go after the old stuffing box and steam fit troubles in a business-like way, and it literally knocks the stuffing out of them. There's no packing of any kind. There's no oiling required, ever. There's no adjusting — the higher the pressure, the tighter the seal. There's little to fear from misalignment—with provision for both lateral and angular movement built right in. Note besides how neatly it provides for more efficient syphon drainage, through the same head that admits the steam.

In dollars and cents, what does all this add up to? Well . . . enough at least to pay the cost of switching over to Johnson Joints in just a short while. Enough certainly to make the Johnson Joint too big to overlook.

Write for literature and the name of your nearby Johnson representative.

JOHNSON
Rotary Pressure
JOINTS

THE JOHNSON CORPORATION
815 WOOD STREET
THREE RIVERS, MICHIGAN

to conduct conditioned weight tests on worsted and cotton yarn, as well as all other routine tests necessary to insure the manufacturer of a uniform high quality product.

The Monsanto Chemical Company has announced the appointment of Robert S. Dempsey, former vice-president of the Raycrest Mills of Pawtucket, R. I., as New York manager of sales and development of the textile chemicals department.

Mr. Dempsey

Mr. Higgins

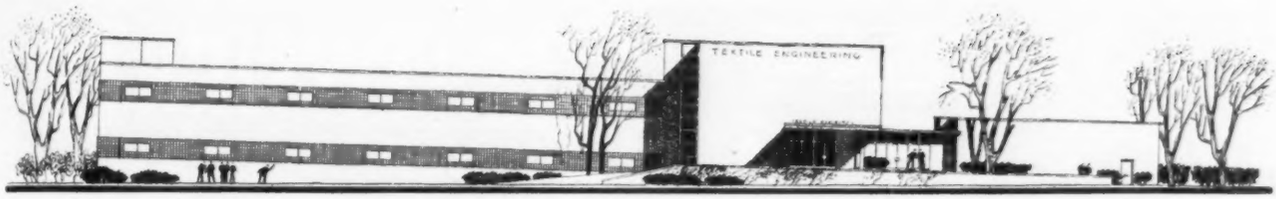
The Reeves Pulley Co. branch office in Atlanta, Ga., has appointed as manager Frank M. Higgins, former sales engineer working out of the home office in Columbus, Ind.

Arnold, Hoffman & Co., Inc., Providence, R. I., has announced two additions to the sales staff: Richard C. Dowling, to be attached to the Philadelphia office, and Harold C. Wood, who will have headquarters in the Boston office.

M. K. Ryan, Jr., a technical textile specialist and former manager of the technical service section in Wilmington, Del., has been named manager of the fabric development section of the acetate division of E. I. du Pont de Nemours & Co. Mr. Ryan's headquarters will be in New York, where he succeeds Carl I. Taber who has been transferred to the nylon division. Dr. G. S. Hooper, technical superintendent of the acetate yarn plant at Waynesboro, Va., will succeed Mr. Ryan as manager of the technical service section.

Charles Stanton, who formerly held a position in the Detroit office, has been appointed district field-engineer in the Philadelphia office of Chain Belt Company, Milwaukee, Wis.

Jenkins Metal Shops, Gastonia, N. C., have appointed Charles Bishop & Co., Inc., New York, as their export representative.



New Building Planned for Ga. Tech.

Complete construction plans have been prepared for a modern instructional and laboratory building for textile engineering at the Georgia School of Technology, according to a recent announcement by Herman A. Dickert, director of the A. French Textile School at the college. Bids for the construction of the building have been invited. It is estimated that the building will cost approximately $750,000, exclusive of equipment.

It is reported that the new building will occupy almost a whole city block and is to be located at Hemphill Avenue and Third Street. Containing almost two acres of floor space, the functionally styled building will be two and three stories high, of reinforced concrete construction with brick and tile exterior walls. Plans call for an auditorium to seat 300; a three-story section with classrooms, offices, exhibit hall and laboratories; and a two-story section with laboratories and mill rooms.

According to Mr. Dickert, the new building will make it possible to almost triple the present enrollment at Georgia Tech in textile engineering. It is expected that the building will be completed by the fall of 1948.

Check List for Ventilating Systems

Ventilating equipment provides basic protection from health and fire hazards in the solvent department, and should be inspected regularly, according to Safety Research Institute. Even well-designed ventilating systems will become inefficient unless properly maintained. To eliminate the five most common causes of failure of ventilating equipment, the Institute suggests that the following points be checked:

Is the fan running backwards? Strangely enough, this is the most frequent reason for failure of correctly designed equipment. Sometimes a fan requires repairs, and then is reversed when it is started up again. A regular check on the direction of fan motion is important.

Is the fan belt loose? Loose belts cause the fan to run too slowly. Since new belts generally loosen up somewhat after use, they should be adjusted after installation.

Is the system overloaded? While a system may be correctly designed for the initial load, it often happens that additional outlets are later added, reducing the overall efficiency of the equipment. The velocity of the air stream should be measured regularly, and whenever additional ducts are added.

Are the ducts and blades dirty? Dirt in a ventilating system is a frequent cause of breakdown and inefficient operation. Systems should be cleaned regularly. Fans should be run for a few minutes after operations are finished, to allow for complete emptying of the ducts.

Is there insufficient make-up air? Since ventilating equipment exhausts air, it cannot run efficiently unless there is provision made for enough make-up air to enter the room.

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FOR THE TEXTILE INDUSTRY
Transmission Belts
V-Belts
Cone Belts
Air, Water and Steam Hose
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Acid Hose
Fire Hose
Vacuum Hose
Textile Specialties
Loom Strapping
Oilless Bearings
Pot Eyes
Rub-Aprons
Rubber Covered Rolls
Rubber-Lined Tanks
RAYBESTOS-MANHATTAN INC.
MANHATTAN RUBBER DIVISION
EXECUTIVE OFFICES AND FACTORIES PASSAIC, NEW JERSEY

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SIZING • REDUCING
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ROHM & HAAS COMPANY
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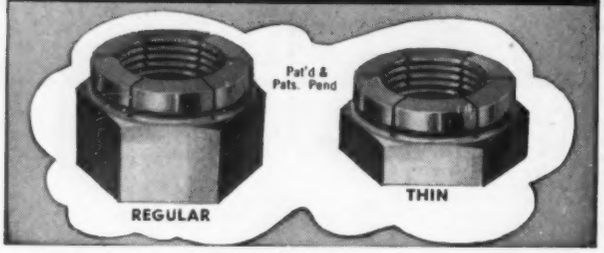
Manufacturers of chemicals for the Textile, Leather and other Industries . . . Plastics . . . Synthetic Insecticides . . . Fungicides . . . Enzymes

FLEXLOC



SELF-LOCKING NUTS

Free samples of our "Flexloc" Self-Locking Nuts — "Draper" or American Hex Standards—are yours for the asking.

"Flexloc" packs maximum usefulness in minimum space because it is rugged, self-locking, compact—and is therefore becoming increasingly popular and this applies alike to U.S.S. and S.A.E. thread series.

Every thread—including the locking threads—takes its share of the load.

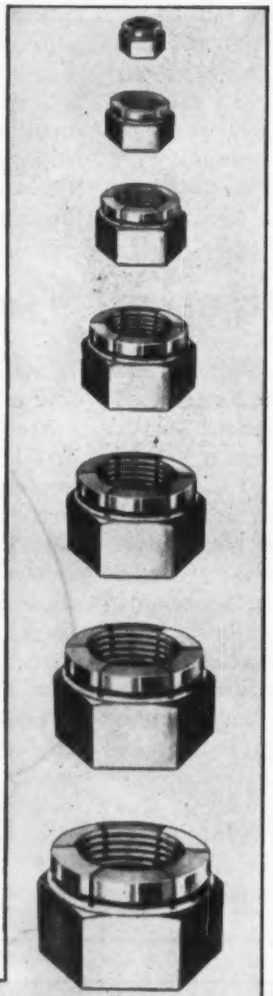
Covers a wide range of tolerances—from low No. 1 to high No. 3. Can be used over and over again without losing much of its locking ability.

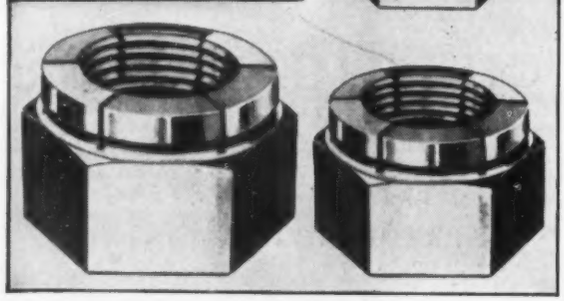
Being a "stop" nut, it stays locked in any position on a threaded member.

"Flexloc" Thin Nuts are especially popular, because their tensile is so high.

Sizes from No. 6 to 1" in diameter — MILLIONS IN USE. Can be made of all commercial metals such as Steel, Stainless Steel, Brass, Bronze, etc. Some of the largest mills have found them to cut maintenance, radically.

Convince yourself with a few free samples





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Boxes, Barrels, Cans, Trucks and other containers made of this material are extremely light in weight—only 1/6 that of steel and only 1/2 as much as aluminum.

Diamond fibre is tough and durable too — withstands hard usage while its smooth, hard, easily cleaned finish makes it safe for handling yarns and fine fabrics. Send for Catalog HW-44 today.

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for every application !

STANDARD TRICOT *and* SPECIAL

MILTON LIGHT METAL BEAMS are now made in three popularly accepted standard sizes PLUS special sizes to meet specific operating conditions.

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CONTINUOUS WELDED CONSTRUCTION

Accurately machined after welding to assure a true-running beam with a smooth, permanent finish.

SPECIALIZING IN THE TEXTILE MACHINERY FIELD

MILTON MACHINE WORKS

DESIGNERS . . . ENGINEERS . . . MANUFACTURERS

MILTON, PENNA.

VICTOR MILL STARCH

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★ PENETRATES THOROUGHLY

★ DEPENDABLE

★ CARRIES WEIGHT INTO THE FABRIC

★ ALWAYS UNIFORM

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The most complete discussion of fixing looms ever published.

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5. FACTORING AND FINANCING — Illustrated booklet on how factoring works, cost and credit information.—TEXTILE BANKING COMPANY, New York, N. Y.

6. SERVING THE TEXTILE INDUSTRY—Illustrated booklet on services of textile and industrial consultants in assisting mill management.—WERNER TEXTILE CONSULTANTS, INC., New York 17, N. Y.

7. RAYON TELLS ITS STORY TO THE PUBLIC—Folder containing reprints of advertisements explaining some of the many roles in which rayon is serving the American public.—AMERICAN VISCOSE CORPORATION, New York 1, N. Y.

8. WHAT DOES A FACTOR DO — Illustrated booklet with case histories.—MEINHARD GREEFF & CO., INC., New York 10, N. Y.

9. TESTING IN MODERN INDUSTRY—This booklet includes many useful tables, conversion factors, equivalent yarn sizes, and other information helpful in textile mills. Also describes specialized testing service. Available free to mill men on request.—UNITED STATES TESTING CO., Hoboken, New Jersey.

PLANT AND PLANT MAINTENANCE . . .

102. "TANK TALK"—Sixteen page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc. said.—R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

107. FINNELL SCRUBBERS—Illustrated leaflets describing and giving specifications for the new Finnell floor scrubbing machines.—FINNELL SYSTEM, INC., Elkhart, Ind.

108. RIHCO TYPE B HUMIDIFIER HEADS—Bulletin describes new atomizers with construction lessening air consumption. — ALDRICH MACHINE WORKS, Greenwood, S. C.

115. ATOMIZER HUMIDIFIERS—Recent issue of "Parks' Parables" on Turbomatic self-cleaning humidifiers, and automatic regulation. — PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

129. BAHNSON CENTRIFUGAL HUMIDIFIER—Bulletin 327 describes this completely self-contained industrial humidifier which requires only water feed and drain and electrical connection to install.—THE BAHNSON COMPANY, Winston-Salem, N. C.

132. ROOF, WALL AND FLOOR INSULATION—Illustrated booklets on uses of PC Foamglas Insulation and describing its waterproof, fireproof and permanent insulating properties. — PITTSBURGH CORNING CORP., Pittsburgh 22, Pa.

135. SAFETY COLOR CODE—How six standard colors can be used to reduce hazards, cut down accidents.—E. I. DU PONT DE NEMOURS & CO., INC., Finishes Division, C44, Wilmington, Dela.

138. MAGNESIUM IN THE TEXTILE INDUSTRY—Illustrated booklet on properties of magnesium for spinning, twisting, winding, knitting machines, looms, beams, spools, bobbins.—ALUMINUM CO. OF AMERICA, Pittsburgh, Pa.

150. RADIO FREQUENCY HEATING — Applications dielectric heating, or twist-setting, cake-drying, dye package drying. — WESTINGHOUSE ELECTRIC CORP., Pittsburgh, Pa.

151. INDUSTRIAL BRUSHES—Illustrated Booklet of Industrial brushes featuring textile usage on shears, printing machines—also flock, raising and cylinder brushes.—M. W. JENKINS SONS, INC., Cedar Grove, N. J.

152. AIR CONDITIONING FOR THE TEXTILE INDUSTRY—40-page illustrated book covering air conditioning from humidity control to complete refrigerated conditioning with installations, charts, covering ABC's of cooling textile mills.—CARRIER CORP., Syracuse, N. Y.

155. GLASS BLOCKS—28-p. booklet with illustrations, engineering data, patterns PC glass blocks. —PITTSBURGH CORNING CORP., Pittsburgh 22, Pennsylvania.

156. ALL-OUT DRY CHEMICAL EXTINGUISHER—Describes this new chemical extinguisher which contains a special powder injected by gas pressure which is an effective means of controlling surface fires in textile fibers.—ALL-OUT MANUFACTURING CORP., New York 16, N. Y.

158. SHIPPER'S HANDY HELPER — A helpful booklet for the shipping room with taping charts, weights and measures, and illustrating a complete line of stencil machines and shipping room supplies. — DIAGRAPH - BRADLEY STENCIL MACHINE CORP., St. Louis, Mo.

159. BAHNSON HUMIDUCT SYSTEM — Bulletin 330 describes this unit system of air conditioning for humidifying, cooling, heating, ventilating, filtering, and dehumidifying in any desired combination. —THE BAHNSON CO., Winston-Salem, N. C.

160. INSTALLING MACHINERY WITHOUT LAG SCREWS OR BOLTS—Booklet describing use of UNISORB pads for anchoring all types of machinery. —THE FELTERS COMPANY, Boston, Mass.

161. ALL-OUT'S EXTINGUISHING ACTION—Describes fire extinguishing action that is such that operators can approach fire without hindrance by extreme radiant heat. The extinguishing material remains on heated surfaces preventing reflash.—ALL-OUT MANUFACTURING CORP., New York 16, N. Y.

162. MODERN METHODS OF TEXTILE FLOOR MAINTENANCE—Illustrated treatise on the history of floor cleaning in textile plants and a detailed description of new methods for reducing floor cleaning costs, as well as preserving textile mill floors.—G. H. TENNANT COMPANY, Minneapolis 11, Minn.

163. LAWLOR FLOOR MACHINES — Illustrated pamphlet containing specifications and describing All-Purpose Floor Machines.—THE SELIG COMPANY, Atlanta, Ga.

165. SELF-LOCKING NUTS — Illustrated folder lists complete dimensions of standard hex nuts available in sizes from No. 4 machine screw to 1¼" S.A.E. and U.S.S. and describes the outstanding features of ESNA Elastic Stop Nuts.—ELASTIC STOP NUT CORP. OF AMERICA, Union, New Jersey.

166. OAKITE PLANT MAINTENANCE DIGEST—A 16-page manual describing materials and methods for handling 54 recurring maintenance cleaning and related tasks in factories and mills. — OAKITE PRODUCTS, INC., New York 6, N. Y.

167. DU PONT COLOR CONDITIONING FOR INDUSTRY—Booklet, color used to reduce maintenance costs, increase production, curtail fatigue, improve employee morale. — E. I. DU PONT DE NEMOURS & CO. (Inc.), FINISHES DIVISION, Wilmington, Delaware.

168. DIAMOND VULCANIZED FIBRE HOLLOW WARE—Catalog HW-11 describing and illustrating boxes, trucks, cans, barrels, baskets, and trays made of Diamond Fibre for use in textile mills.—CONTINENTAL-DIAMOND FIBRE CO., Newark 11, Del.

169. VACUUM CLEANING IN TEXTILE MILLS—Circulars and action pictures of Tornado Portable Industrial Vacuum Cleaners.—BREUER ELECTRIC MFG. CO., 5084 N. Ravenswood Ave., Chicago 40, Ill.

170. Why it pays to anchor your machines with UNISORB—Illustrated booklet discussing control of vibration and noise and how UNISORB reduces maintenance costs.—THE FELTERS CO., 210 South St., Boston, Mass.

POWER TRANSMISSION, MOTORS, BELTING, LUBRICATION . . .

210. GOODYEAR MECHANICAL RUBBER GOODS CATALOG—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill.—GOODYEAR TIRE & RUBBER CO., Akron, Ohio.

211. JOHNSON BRONZE CATALOGUE NO. 460—Shows over 850 sizes of cast bronze bushings, 350 sizes of UNIVERSAL Bronze Bars and over 250 Electric Motor Bearings. — JOHNSON BRONZE COMPANY, New Castle, Penna.

212. GATES TEXTILE ACCESSORIES — Showing the increased efficiency and economy to be secured through the use of Gates cone belts, center belts, card bands and loom binder cushions.—THE GATES RUBBER COMPANY, Denver, Colo.

216. LEATHER BOOKLET NO. 202 — Attractive booklet illustrating and describing BONDARON Special Tanner Leather as used in various forms such as Check Straps, Solid Bound Leather Belting, Flat Belting.—CHAS. BOND CO., Philadelphia, Pa.

218. BALL BEARINGS ON TEXTILE MACHINERY—Catalog 9 gives advantages of ball bearings, describes types, illustrates each type of textile machinery.—THE FAFNIR BEARING CO., New Britain, Connecticut.

225. BRONZE BEARINGS—64 page catalog of standard sizes of textile and industrial bearings, graphited oil-less bearings, bronze bars, babbitt metals.—THE BUNTING BRASS AND BRONZE CO., Toledo, Ohio.

230. PRINCIPLES OF TEXTILE MILL LUBRICATION—Booklet giving specific lubrication problems and data on practical textile operation, including advice on uses of various oils and greases.—TIDE WATER ASSOCIATED OIL CO., New York, New York.

231. V-BELT ENGINEERING DATA BOOK—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. — MANHATTAN RUBBER MANUFACTURING DIV. of Raybestos-Manhattan, Inc., Passaic, N. J.

235. JOHNSON LEDALOYL BEARING BRONZE—Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricated bronze for textile bearings and bushings.—JOHNSON BRONZE COMPANY, New Castle, Pennsylvania.

236. LEATHER BELTING CALCULATOR—Handy and attractive calculator for determining belt, speeds, horsepower per inch of belt widths, etc., will be sent free on request.—J. E. RHOADS & SONS, Philadelphia, Pa.

237. FAFNIR BALL BEARINGS FOR THE TEXTILE INDUSTRY—Outlining the application and advantages of ball bearings on textile machinery.—FAFNIR BEARING CO., New Britain, Conn.

244. TEXACO SPINDURA OILS—Folder on lubrication for all types of spindles, based on actual tests.—TEXAS CO., New York City.

246. CUTTING OPERATING COSTS—Nationwide Illustrated Survey showing how American textile mills cut operating costs with Multiple V-Belt Drives.—GATES RUBBER CO., Denver, Colorado.

251. GILMER BELTS FOR THE TEXTILE INDUSTRY—40 page booklet on belting and drives for all textiles. Includes engineering information, tables, formulas.—I. H. GILMER CO., Tacony, Philadelphia, Pa.

258. VARIABLE SPEED CONTROL UNITS—Complete information on Reeves Variable Speed, including Transmission, Vari-speed motor pulley and Motordrive. Includes examples, illustrations, diagrams, engineering tables. Catalog G-435.—REEVES PULLEY COMPANY, Columbus, Ind.

263. NEEDLE ROLLER BEARINGS—Catalog Engineering and Application Data Edition 32 contains full data on selection of proper Needle Roller Bearings and outlines uses of such in various commodities including textile uses, types, installations, lubrication, etc. — TORRINGTON COMPANY, Torrington, Conn.

264. NEW DEPARTURE SHOP MANUAL—Illustrated catalog showing ball bearing mounting and maintenance practice. Covers storage, cleaning, lubrication, types of bearings.—NEW DEPARTURE DIV., GENERAL MOTORS CORP., Bristol, Conn.

265. INTERCHANGEABLE BALL BEARINGS FOR REPLACEMENT—Charts showing numbers used by manufacturers to identify bearing characteristics, also information on specifications.—NEW DEPARTURE DIV., GENERAL MOTORS CORP., Bristol, Conn.

268. THE LUBRIPLATE SERVICE HANDBOOK—Attractive 28-page illustrated book containing valuable information concerning the important subject of lubrication and setting forth complete recommendations of LUBRIPLATE lubricants for application to all types of machinery.—FISKE BROTHERS REFINING CO., Newark 5, New Jersey.

269. LUBRICATION AND MAINTENANCE OF BALL AND ROLLER BEARINGS—Illustrated bulletin describing efficiencies and economies of NON-FLUID OIL for all types ball and roller bearings.—NEW YORK AND NEW JERSEY LUBRICANT CO., New York, N. Y.

270. MANHATTAN FLEXLASTICS — Illustrated booklet describing how flexlastics are used in the Manhattan and Condor line of belting and mechanical rubber goods.—MANHATTAN RUBBER DIVISION, Passaic, N. J.

271. CARDING, SPINNING AND WEAVING LUBRICATION—Informative bulletins describing advantages of NON-FLUID OIL over ordinary lubricants for the lubrication of carding, spinning and weaving machinery.—NEW YORK AND NEW JERSEY LUBRICANT CO., New York, N. Y.

272. HOUGHTON LUBRICATION CHART — Attractive chart listing lubrication recommendations for all mill departments and various textile machines.—E. F. HOUGHTON AND CO., Philadelphia, Penna.

273. POWER TRANSMISSION CATALOG—"Off the shelf service" is a feature in this catalog describing speed reducers, gears, chain drives, belting, power and gravity conveyors, and many other nationally known lines distributed by PATRON TRANSMISSION CO., 120 Grand St., New York City.

274. MOCCASIN OIL DISTRIBUTING CARD CYLINDER BEARINGS—Illustrated folder No. 2-47 describing a successful method for lubricating troublesome card cylinder bearings. Diagram shows suggested piping layout.—MOCCASIN BUSHING COMPANY, Chattanooga, Tenn.

275. GEM OILERS—Leaflet showing construction features, capacities, etc., of flexible spout welded steel oilers.—GEM MFG. CO., Pittsburgh, Pa.

INSTRUMENTS, STEAM SPECIALTIES . . .

301. JOHNSON ROTARY PRESSURE JOINTS—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instruction, types, sizes, dimensions and prices. — THE JOHNSON CORP., Three Rivers, Mich.

307. THERMOMETER AND PRESSURE GAUGES—Catalog 6705-R and 6706 give data on both circular and rectangular case pressure type thermometers for indiacting, recording and controlling processing operations in textile industry.—BROWN INSTRUMENT COMPANY, Philadelphia, Pennsylvania.

311. PIPING POINTERS—Industrial maintenance book covering installation and handling of piping, valves, fittings. Well illustrated, practical tips.—CRANE CO., Chicago, Ill.

314. MOISTURE CONTENT CONTROL — Bulletin F-1705-1 giving details of features and benefits of moisture equipment control for slashers and textile application. — BARBER-COLMAN CO., Rockford, Ill.

315. CONTROL INSTRUMENTS FOR TEXTILE PROCESSES—32-page illustrated booklet describing controls for such processes as slashing, dyeing, bleaching, kier boiling, drying, air-conditioning, etc. —BROWN INSTRUMENT CO., Philadelphia, Penna.

316. HYDRAULIC POWER UNITS—Literature describing hydraulic unit, motor, pump, reservoir, valving a small compact unit for operation of hydraulic calenders, presses, hydraulic controls, etc.—B. F. PERKINS & SON, INC., Holyoke, Mass.

317. POWELL VALVES FOR CORROSION RESISTANCE—20-Page booklet which briefly describes and illustrates the very complete line of Powell Valves available in a large variety of metals and alloys to handle all corrosive fluids—to help solve flow control problems where corrosion may be encountered.—THE WILLIAM POWELL CO., Cincinnati 22, Ohio.

319. KMC TEXTILE PSYCHROMETER — Leaflet No. 488 describing a spot check instrument for determining quickly the moisture contents in textiles and relative humidity.—KEARNY MFG. CO., Kearny, N. J.—Greenville, S. C.

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THE FIRST AMERICAN MADE KNITTING MACHINE to produce Links-and-Links patterning in hosiery was the Komet Links-and-Links Machine, produced by Scott and Williams in 1939. This machine, which knits an almost unlimited variety of rib patterns, designs and fancy stitches, including argyle block patterns, in top, leg and foot, is one of the most versatile machines ever built. It is an outstanding example of S&W development work, which has pioneered many "famous firsts" that build business for the circular knitting industry.

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Komet Links & Links Machines

New Attachments and Improvements

THIS IS THE FIRST of a new series of articles by K. O. Metz on the Komet and Links and Links knitting machines. This series supplements information and helpful suggestions which were welcomed by our readers in a series presented previously.

By K. O. METZ

OUR EDITOR has called attention to the fact that readers want information on new developments and improvements for the Komet Links and Links machines as they appear. So, after a self-inflicted rest and with no intention of letting our editor (or readers) down, we shall take up new devices and improvements and thus keep the series of Komet and Links and Links articles up to date.

The latest models have quite a number of valuable improvements and new attachments which were developed prior, during, or since the war. In due time we shall discuss all new developments for the benefit of readers who may not be familiar with them.

For this article we have chosen the eyelet closing device. The accompanying instructions* and drawings were supplied by Scott and Williams. Our thanks to them for this courtesy.

After comparing the drawings with new machines equipped with the eyelet closing device, delivered during the past few months, and re-checking the printed instructions, we find that some changes were made or some parts were omitted because all could not be shown. We shall fill in these gaps later.

No doubt there are a great number of Komets and L and L machines in use today which are equipped with the eyelet closing device; therefore this article will not be new to some fixers. Perhaps there are still more machines in use which do not have this device, so seeing it on paper may help many fixers to learn something about it.

Every Komet fixer is familiar with the loose stitch (or eyelet) which appears in all Komet goods produced on machines set up to knit double feed. The eyelet is more noticeable on coarse gauge numbers than on fine gauge. Its size is also affected by the type and count of yarn used and by how loose or tight the fabric is knitted. On some numbers the eyelet is too small to bring complaints from customers, but on others it may be large enough to be classed as defective knitting by anyone not familiar with Komet goods.

The eyelets or loose stitches, as we prefer to call them, show up on the first needle which begins knitting when the auxiliary or double feed goes into action. This occurs immediately after the welt, when 1 x 1 tops are knit double feed, at the beginning of the broad rib when 1 x 1 tops are knit single feed, and immediately after the heel.

At their respective points the double feed yarn feeder swings into position and the first needle to knit takes the yarn. The trapper or yarn clamp releases the end when knitting begins. Since there is no means of controlling the released end of yarn the eyelet is produced.

The Eyelet Closing Device

Many numbers are made on Komets using two or three ends of yarn for each feed. Frequently large eyelets are made because the first needle to knit double feed failed to take all the ends. The eyelet closing device provides the means to control the yarn held by the yarn clamp, and we find it very effective in helping to eliminate partial or complete failure to take the yarns when double feed knitting begins. Thus the eyelet closing device actually solves two problems instead of one.

The device is not complicated, does not add any serious fixing problems, and from personal experience we find that it functions exceptionally well when properly adjusted.

Figure I shows that part of the device which supplies the motion necessary to bring the eyelet closing mechanism into and out of action. The placer operator cam 206149 moves the cam follower 206147 in and out of action as it rides over the steps on the placer operator. The high step moves the device fully in. On the intermediate step the actual closing of the eyelet takes place, and the next step takes the device out of action.

*See page 190 for S&W instructions.

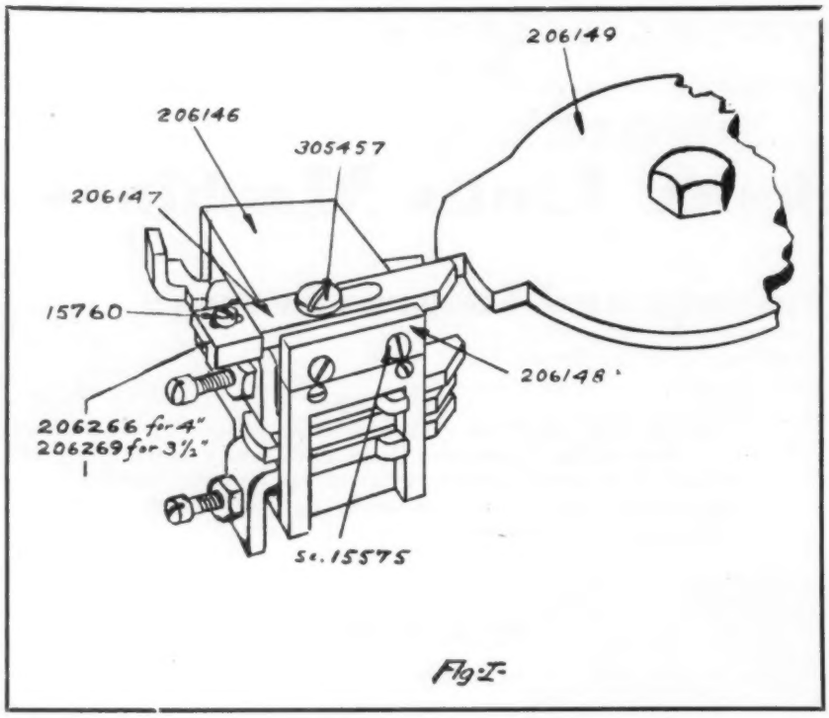


Fig. I

The adjustable plate 206266 (for 4" machines) is used to get the proper setting when the cam follower 206147 is fully in; at this point the hook on the yarn placer slide 206143 (See Fig. II) should clear the sinkers, and the cam follower 206147 should have about 1/32" of end play to avoid undue pressure against the trapper bracket when the cam follower 206147 is fully in.

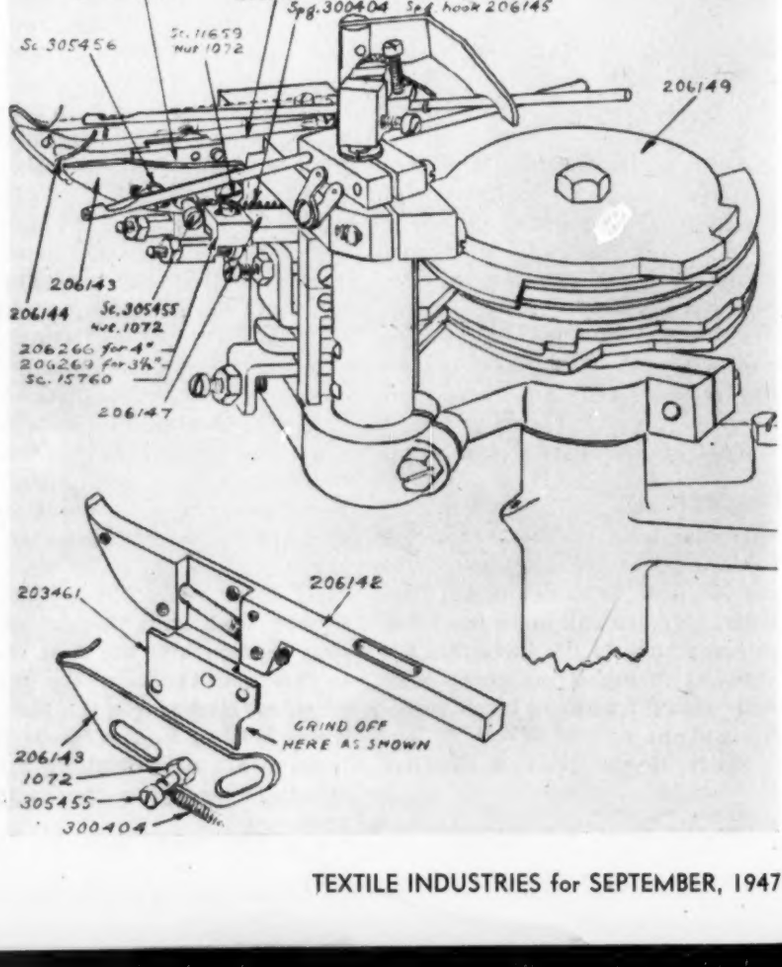
A new slide block 206146 is shown in Fig. I, but this new block is not the same as those used on new machines. We will come to that change later. The remaining parts are standard equipment found on any plain two feed Komet or Links and Links machine.

Figure II shows the complete device, all operating cams in place on the spindle, and with the placer operator cam 206149 shown uppermost. The yarn placer slide 206143, and slide hook 206144, are shown including draw thread and double feed feeders and their respective yarn clamp and cutter blocks. The *new* draw thread clamp and cutter block 206142 is shown in the lower part of Fig. II, including the yarn placer slide 206143 which is shown attached to the cutter block 206142 in the upper part of Fig. II. The slide is held in position by screws 305456 and 11659. The spring 300404 pulls the slide 206143 out to close eyelet.

Note the spring 300404 in the upper drawing, and the adjustable plate 206266 immediately behind the head of screw 305455. Also, note the position of the elongated holes in the yarn placer slide 206143. They provide inward and upward movement for the placer hook going in, out, and down coming out of action.

When the yarn placer 206143 is out of action, the upper point or end of the hook should be flush with the upper surface of the draw thread cutter block. When the draw thread feeder swings into and out of feed position, it should just pass over the end of the placer hook. The placer hook in Fig. II is shown about half way out. Note the end of the hook is *above* the cutter block.

We stated earlier that either some parts were omitted in the blue prints shown, or the device has been changed since these prints were made. On new machines just recently received, *two* bolt operating cams and two slides are used. Figs. I, II, and III, all



show *one* bolt operating cam 206150. This is the only cam mentioned on the first instruction sheet which gives the order in which the various operating cams are to be placed on the spindle beginning at the bottom.

On late model Links and Links machines the regular draw thread cam and slide are at the bottom of the spindle as shown in Figs. I, II, and III. Next comes a bolt operating cam and slide used in connection with draw thread knitting *only*, then comes a bolt operating cam and slide used in connection with *double* feed knitting only. This new arrangement is very neat and offers a number of advantages. Fig. A is a sketch of the two slides. The lower slide has an L-shaped inner end which makes contact with the draw thread bolt lever. The upper slide is the same as usual except it is shorter.

It can be seen from Fig. A that the bolt lever can be operated independently by either operating cam and slide. This feature is not only useful but necessary on machines equipped with the eyelet closing device. Due to the increased number of medium knitting butt sliders in the lower cylinder and a like number of long knitting butt sliders in the upper cylinder, the timing of the double feed operating cam must be exact. By using *two* bolt operating cams, each cam can be timed according to its particular function and in harmony with the slider knitting butt layout in both upper and lower cylinders respectively.

In Fig. III we see the complete device just as it appears on the machine, minus *one* bolt operating cam already mentioned. The double feed yarns are shown being held by the double feed trapper. The draw thread yarn has no connection with the eyelet closing device.

The reader can readily visualize the double feed feeder in feed position. Bear in mind that in using the eyelet closing device the placer hook comes up *before* the double feed feeder swings into feed position. The end of the feeder must clear the upper end of the placer hook as the feeder swings in. The double feed feeder must guide the yarn *under* the point of the placer hook so the upward curved part of the placer hook will guide the yarn *down* and thus into the front of the placer hook by the time the double feed feeder reaches feed position.

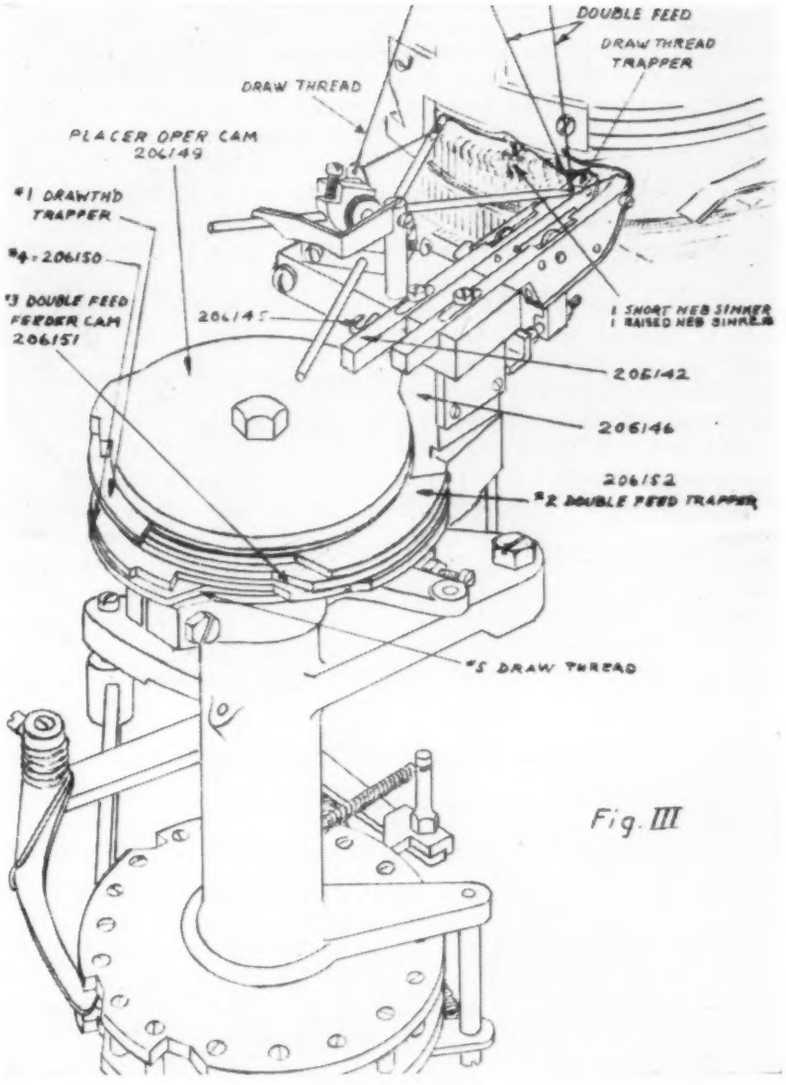
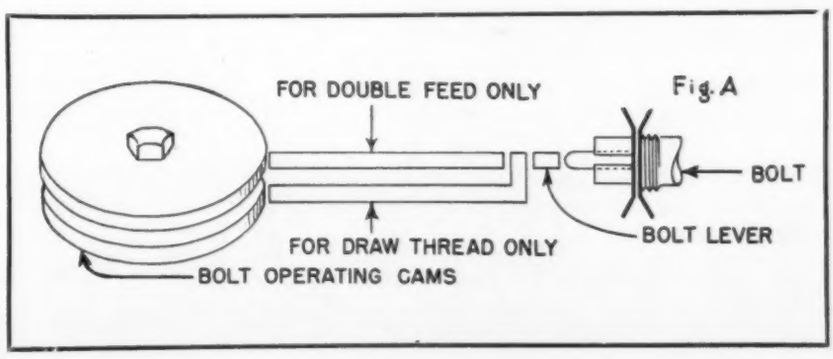


Fig. III

From actual experience we find that closer attention is necessary in setting the double feed and draw thread trapper assemblies if for any reason they must be removed and replaced. This is quite obvious for both of these assemblies have their usual functions to perform and their settings have a direct bearing on the successful operation of the eyelet closing device.

Note the instructions given for setting the double feed trapper



cam 206152. On all Komets and Links and Links machines set up for double feed knitting, the double feed rachet wheel makes four moves to get the double feed into action.

All the elements of timing, where the operation of the eyelet closing device is concerned, are concentrated on the *second* move of the double feed ratchet wheel. On this move the yarn placer goes fully in and up, the double feed feeder swings into feed position, the yarn placer moves half way out to draw the yarn into the sinker nebs, and just *before* the second move is completed the double feed trapper opens *just enough* to release the trapped end of yarn. The setting of the double feed trapper cam and the yarn placer operator 206149 must therefore be in harmony with the second move of the ratchet wheel.

It can readily be seen that correct timing is really important. Getting the double feed trapper cam to open partially at this point means that the double feed trapper slide will be resting *partially* on the *incline* of the trapper cam. At the end of the second move, the double feed ratchet wheel must have sufficient *tension* to hold it there until the third move is made, and on this move the double feed trapper opens fully.

Adjustment Prevents Seconds

Upon careful examination it will be noted that the inclines or camming surfaces on the new trapper cams are somewhat steeper than they are on old style cams. This no doubt was necessary due to closer timing elements needed to release the double feed yarns at the proper time.

Correct adjustment of the double feed feeder guide 203455, and guide post 302793 (see parts catalog) becomes more important. Normally this adjustment can vary, just so it raises the double feed feeder over the draw thread feeder when the former swings into feed position. The movement of the double feed feeder is exactly the same with the eyelet closing device, but the double feed feeder must guide the yarn *under* the raised yarn placer hook. Correct timing at this point is important.

For best results keep the draw thread trapper and double feed trapper set *in* as near to the needles as possible, just so their inner ends and open trapper blades will clear the needle latches. The yarn placer hook can only be brought near to the sinkers when the draw thread trapper assembly is properly set. The double feed yarn should lay in a straight line from the trapped end to feeder in feed position, and the yarn should be *nearest* to the needles at a point where the first needle to knit double feed takes the yarn.

When the yarn placer slide is fully in, the placer hook should not hold the yarn *away* from the needles. Following the foregoing suggestions will keep the double feed yarn placed where it can readily be taken by the first needle to knit double feed, thus preventing seconds.

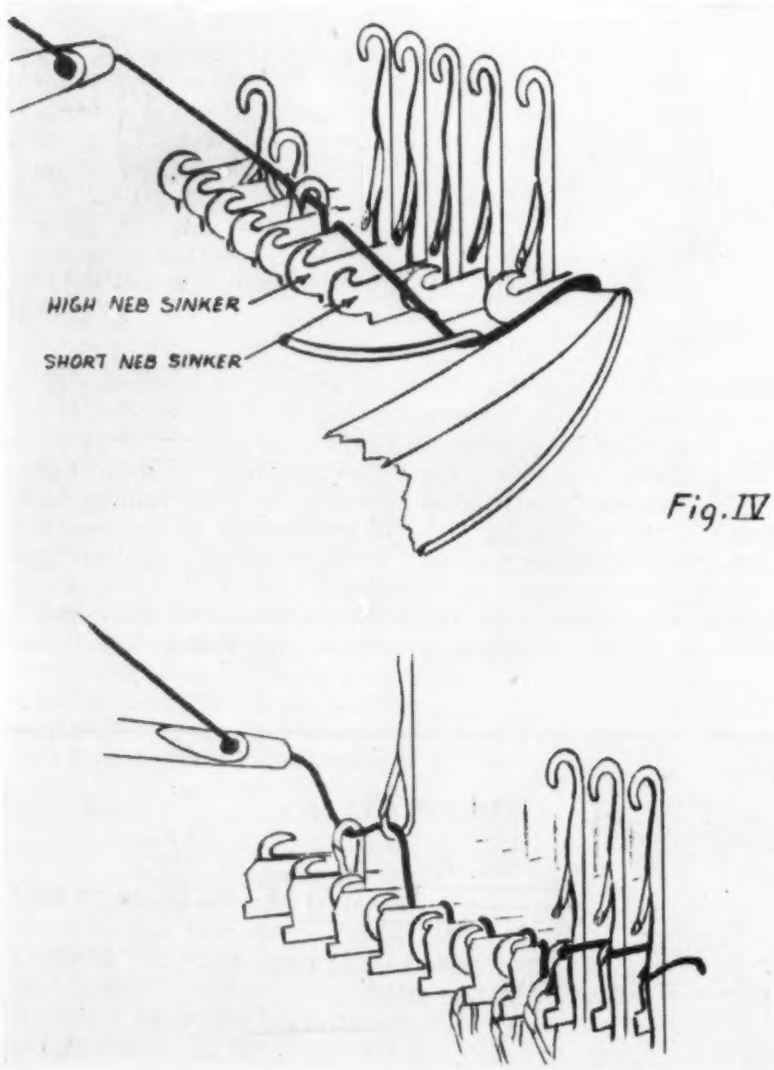


Fig. IV

The drawing, in Fig. IV, shows the draw thread yarn being held by the draw thread trapper and the draw thread feeder in feed position. The drawing shows how the yarn is taken by the first needle to knit double feed and the placer hook drawing the yarn down so it will go under the sinker nebs. Note that the placer hook pulls the yarn down where the sinkers begin their inward movement. When the high neb sinker reaches the yarn, the clamped end should be released to avoid pressure which would break the yarn. The lower portion of Fig. IV shows what happens to the released end.

Figure V shows the racking cam attached to the bevel gear mentioned in the S. & W. instructions. The racking cam should be retarded ⅛" when the eyelet closing device is applied to any Komet or Links and Links machine. We

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approximately 25 years before James E. A. Gibbs produced the first single thread chain-stitch sewing machine, a patent was granted to Barthelemy Thimmonier of France, for a crocheting machine, and, crude though it may have been, the inventor had, at one time, 80 of these machines in operation in his factory to make uniforms for the army of Charles X, King of France.

All the machines were later destroyed however, and Thimmonier barely escaped with his life, when a mob became incensed with the idea that henceforth the machines would prevent the journeyman tailor from obtaining a livelihood.

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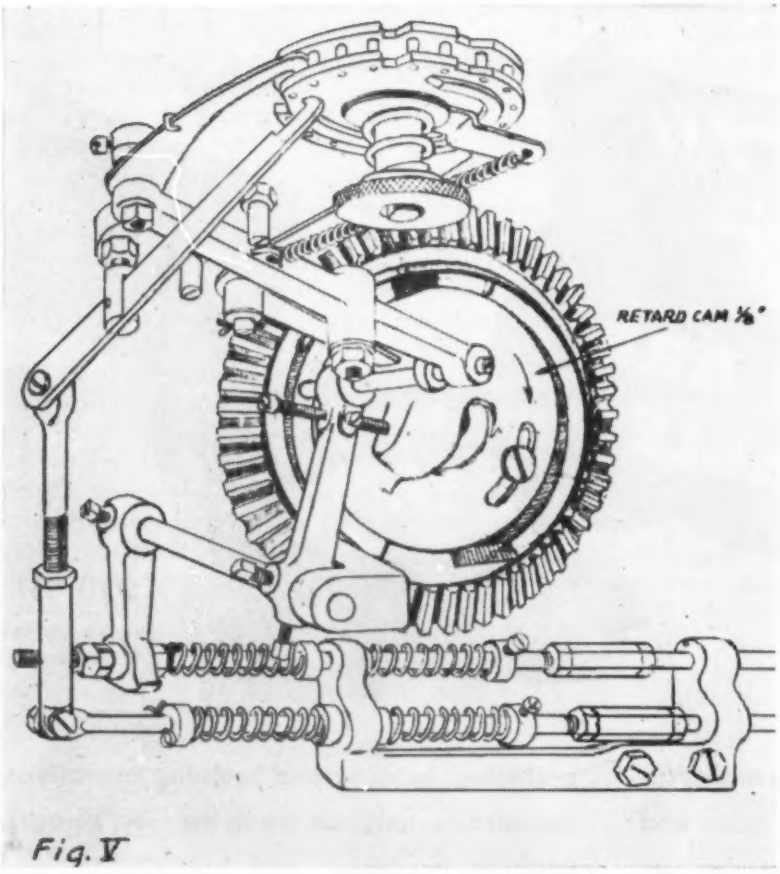

Fig. V

have gone over the eyelet closing device from stem to stern and find that it functions exceptionally well. Ample adjustment facilities are provided and once properly adjusted, they stay put.

On some types of yarn, such as singles cotton or wool, lint will accumulate in the placer hooks occasionally and prevent the double feed yarn from lying near the needles or hinder the released end as it slides through the placer hook. Other than that, which is of minor importance, the eyelet closing device gives no trouble and it closes the eyelet completely, thus making finished goods neater in appearance. Once more the machine builders have added a worthwhile device to one of their outstanding machines.

Instructions For Two Feed Eyelet Closing For Plain Komet or Links and Links

Loosen clamp screw on draw thread swivel bracket and swing out to inoperative position. Remove both yarn feed fingers and trapper body bracket. Remove slide block and replace with new block 206146 after assembling as shown in Fig. I. Use slides and other parts from blo : taken from machine. Remove original draw thread trapper and replace with 206142.

Assemble all regular parts in new yarn clamp and cutter block 206142 plus the yarn placer slide 206143. The lower corner of the side plate 203461 must be ground out to clear the shoulder of screw 11659. Use nut 15025 for lock nut.

The front shoulder screw 305456 replaces lower screw in side plate. No grinding needed.

Screw 305455 holds the front end of spring 300404. Use lock nut K-1072. The other end of spring 300404 is held by spring hook 206145 around the clamp screw holding the feeder guide post in the trapper body bracket. Assemble trappers in bracket and on the machine, setting the wire hook 206144 in yarn placer slide as near to the sinkers as is safe with trapper end to clear the latches.

Apply the placer operator cam 206129 and leave free enough to turn on clamp screw to test movement of placer hook. When on highest part of cam the hook, 206144, should be high enough to allow yarn from trapper to a finger in feeding position to be above the sinker nebs. Be sure the hook clears the sinkers and side pieces. Adjustable end of cam follower 206147 provides for proper setting.

Tighten screw 15760. On 4" machines it is sometimes necessary to grind a clearance in the trapper body bracket to allow full movement back for yarn placer slide 206143.

Remove the placer operator cam and apply other cams as follows (starting on the bottom of the bracket, using the regular spacing washers): First place the regular draw-thread cam, marked No. 5; next the new bolt operator cam 206150, marked No. 4; next the new double feed feeder cam 206151 marked No. 3; next the new double feed trapper cam 206152, marked No. 2; next the regular draw-thread trapper cam, marked No. 1. The new placer operator cam 206149, replaces the clamp washer at the top of the shaft.

The draw thread cams for yarn feeder and trapper have their usual settings. The closest setting of the bolt cam is to get the two feed bolt in the upper cam box in ahead of a new series of long butt sliders to cover the extended medium butt series in the lower cylinder where end is introduced. Unless long butt sliders are applied in the upper cylinder to cover the medium butt series where yarn is entered, the rib latches may close when sliders travel down the 2 feed stitch cam and thus unguard rib latches. Of course, when needles in the upper cylinder are knitting rib at the second feed there are no latches to become unguarded.

The closest settings for the double feed feeder cam is when the finger is coming out of action at the heel and toe or ring toe.

The closest setting for the double feed trapper cam is the opening of the blade to release the trapped end of yarn before pressure is exerted on end interlaced in the sinkers ahead of eyelet needle, which is the first needle to draw a stitch down the 2 feed stitch cams.

The closest setting for the yarn placer is timing the drop of the placer hook to insert the end into the short neb sinkers ahead of the eyelet needle, usually as eyelet needle draws its loop below sinkers.

Approximately 20% of total needles in the cylinder form a medium butt series which precedes the long butt series in the lower cylinder. Thus in a machine with 132 needles this panel would contain 26 medium butt

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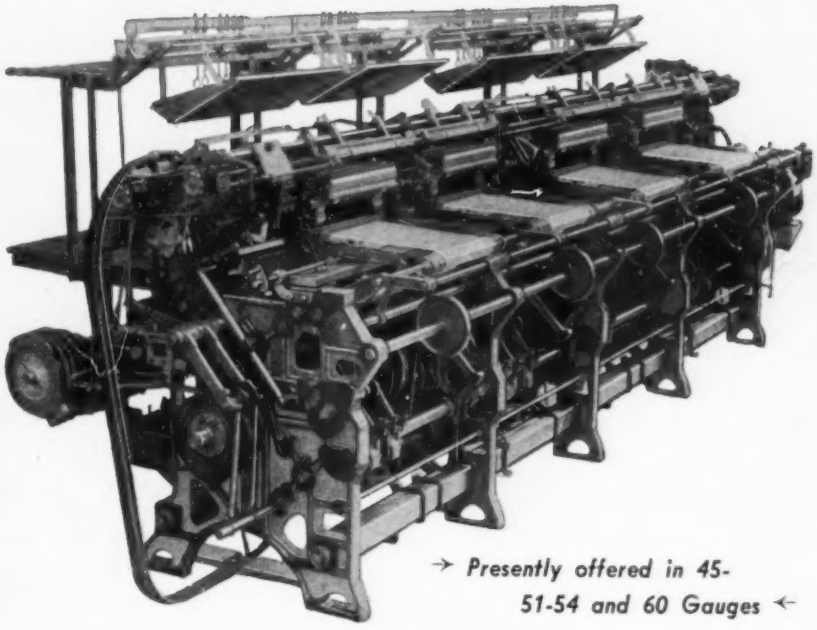

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sliders ahead of the long butts. This refers only to the knitting butts. The lower or transfer butt set up remains as it originally was.

In the upper cylinder, long butt sliders cover the medium butt section so both upper and lower cylinder sliders start to knit the 2-feed yarn at the same time. In this way no latches can be left unguarded when passing a knitting point.

This requires a different welt cam on the quality drum.

Replace the cam 204840 with the new one 206153 furnished using same screws to hold it in place.

The short neb sinkers go ahead of the eyelet needle in spaces 2 and 3, Fig. IV. Thus, three sinkers actually take the end ahead of the eyelet needle. A raised neb sinker following a short neb sinker is often used instead of two short neb sinkers. The trapper opens to relieve strain on the yarn after safely caught by the sinkers.

This end is carried around to the main feed where it backs away from the needles when the sinkers retract and the latches coming down back of the latch guard pick the end up and carry it to the hooks of the needles which knit it back toward the eyelet needle, thus robbing from the eyelet and closing it.

The draw thread finger passes over the placer hook when placer is off operating section of the cam.

Retard the 2-feed racking cam on bevel gear $\frac{1}{8}$". Fig. V.

A disc tension close to the 2-feed yarn finger prevents looping.

Scott & Williams, Inc., I-2393, Sheets 1, 2, *and* 3.

AN EYE ON THE KNITTING MILLS

Teddy Mittens, Inc., Boston, Mass., has been chartered with a capital of 250 shares of stock, no par value, to operate a knitting mill. Lawrence L. Gross is president.

Burlington Mills Corp., Greensboro, N. C., has begun transfer of machinery from its Bur-Mill, Graham, N. C., men's half-hose, to the McLaurin Hosiery Mills unit, Asheboro, N. C., and will occupy a new addition to the latter mill. An increase of about 50 per cent in output in the line of men's half hose and anklets is expected.

Holt Hosiery Mills, Inc., has been incorporated with a capital of $200,000, to operate a knitting mill in Burlington, N. C. A. M. Carroll, Sr. and Jr., both of Burlington, are the principal incorporators.

Glenn Mills, Inc., Lincolnton, N. C., has acquired a controlling interest in Wisteria Mills, Inc., Gastonia, N. C., formerly operated as Gastonia Full-Fashioned Hosiery Mill, and will coordinate operations with the main plant at the location first noted, continuing production as heretofore. A branch mill of the purchasing company at Conover, N. C., specializing in women's hosiery, will be moved to Gastonia and consolidated with the Wisteria Mill.

C. & S. Full-Fashion Hosiery Mills, Inc., recently organized with a capital of $100,000, has plans to operate a knitting mill in Lincolnton, N. C. F. H. Chamberlain, Sr., C. B. Chamberlain and W. H. Childs, all of Lincolnton, are the incorporators.

Pilgrim Full-Fashioned Hosiery Mills, organized recently, has established a mill in Valdese, N. C., for the manufacture of nylon hosiery. The company is capitalized at $200,000. J. C. Brinkley is president and Kurt Theumuller is second vice-president and general manager.

Lamar (S. C.) Hosiery Mills, Inc., has been chartered with a capital of $75,000, to operate a knitting mill, and production is proposed to begin at an early date. J. W. and Gerald Beasley, both of Lamar, are the principal incorporators.

Vogt Knitting Mills, Inc., McMinnville, Tenn., has plans for an expansion in production and will begin installation of additional knitting machines and auxiliary equipment at an early date.

Kiddie Tot Hosiery Mills, Inc., has been chartered with a capital of $100,000, to operate a mill in High Point, N. C., for the manufacture of children's hosiery. N. O. Bollinger, Jr., High Point, is the principal incorporator.

Mills Knitting Co., Inc., recently organized, plans the operation of a mill in High Point, N. C., for the manufacture of outerwear. Harvey A. Mills, High Point, is president.

Harris & Covington Hosiery Mills, High Point, N. C., has installed 60 new Scott & Williams wrap machines with loopers and other equipment, which will involve an outlay of more than $150,000.

Compton Mills Corp., Los Angeles, Calif., has been formed and operations begun for the manufacture of tricot fabrics, designated for sportswear, beachwear and men's wear. Majer Rubin is president, George Clairmont, executive vice-president, and Gordon Garner, superintendent.

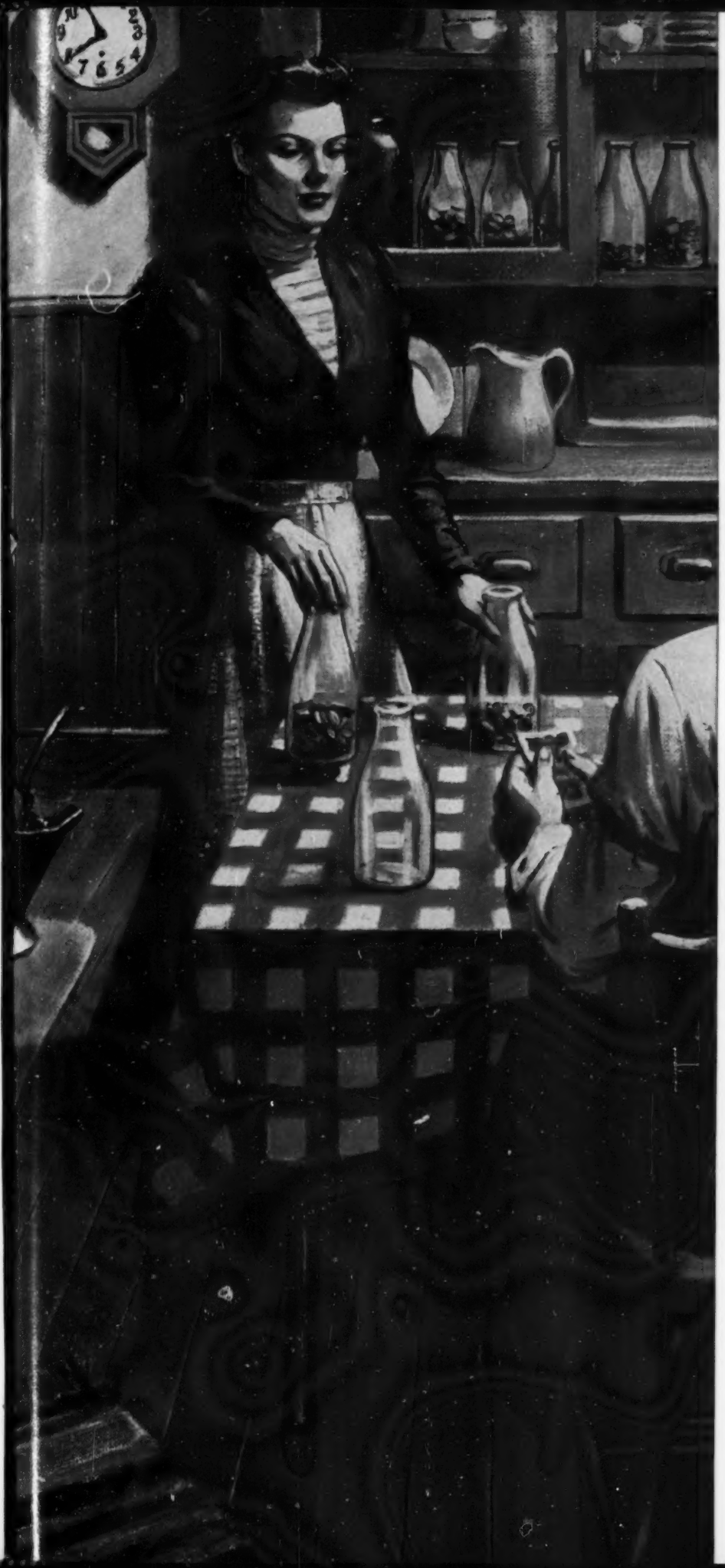
Additional Karl Lieberknecht knitting machines are to be installed soon at Belvedere Hosiery Co., Charlotte, N. C. The company now operates three Lieberknecht machines in production of 51-gauge nylon full-fashioned hosiery.

Davis Hosiery Mills, Inc., Newport, Tenn., has sold all of its plant equipment to the May Hosiery Mills, Nashville, Tenn.

QMC to Keep Industry Posted by Memo

From time to time "A Memorandum to Industry from the Commanding Officer" will be forwarded to manufacturers and dealers throughout the country by the New York Quartermaster Purchasing Office, 111 East 16th St., New York 3, N. Y., according to a recent announcement by Col. L. O. Grice, commanding officer of the installation.

Quoting the first issue which was dated August 11, 1947, "the aim of the 'Memorandum' is to serve as a medium of contact between our office and industry." It is expected that timely and helpful information about anticipated U. S. Army supply needs and current procurement activities will be transmitted through the medium of this publication.



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Hosiery Men Meet at Roanoke

Staff Report

SOUTHERN hosiery manufacturers heard Taylor R. Durham report that only one new union contract has been executed among members of the Southern Hosiery Manufacturers Association since the last annual meeting at Asheville. Mr. Durham, president and secretary of the association, speaking before the annual convention at Roanoke, Va., August 22-23, advised that several contracts have been under negotiation, together with quite a few up for renewal.

Look to Future

Referring to a complete survey covering wage rates and working conditions prevailing in the four primary branches of the hosiery industry, Mr. Durham told of the extreme importance of such surveys and expressed the opinion that "there is nothing more important for an employer than to have the satisfaction of knowing that he is treating his employees as fair and equitable as his area competitors operating the same general type of equipment . . . and there is nothing more conducive to good employee relations than for employees to realize that their own employer is careful to see to it that their interests are being protected."

A note of caution and sound business reasoning was injected into the report as the speaker forecast little difficulty in the future for those mills which keep their equipment modern. He suggested, however, that a rather difficult situation may be faced in the future by mills with obsolete machinery when desirable fibers become plentiful and modern equipment is readily available. Though this day may be many months hence, his advice was that now is the time to prepare for that day.

With reference to hosiery identification, Mr. Durham pointed out that no manufacturer should "make it easy" for a buyer to defraud the public by using stickers instead of transfers on subquality hosiery. "Great care," he said, "should be exercised to transfer subquality hosiery as 'seconds' and 'thirds' instead of as 'irregulars' unless the condition of the hosiery is such that the use of that term is justified under the strict requirements of the Trade Practice Rules."

Depreciation and Obsolescence

The effect of depreciation and obsolescence on the federal tax and on dividend policies was discussed by William H. Westphal of A. M. Pullen & Co., CPA's, Richmond, Va. Mr. Pullen admitted the "dryness" of his subject, but the consensus of those present was that he handled the subject in a most interesting manner.

Selecting a hypothetical case and presenting it in narrative form, the speaker emphasized a few basic truths concerning depreciation. These are:

1. Depreciation is sustained on all physical properties that deteriorate in value and useful life because of wear and tear of ordinary obsolescence.

2. Depreciation must be claimed in the taxpayer's return if he expects to get the deduction for income tax purposes, before those returns are barred by the Statute of Limitations.

3. Depreciation is considered by the government to have been claimed whether or not this has actually been done, in determining the remaining cost of an asset to be used in calculating gain on its sale, and it is computed for the years in which none was claimed at the rate proved to be correct or allowable.

Earl Bunting, president of the National Association of Manufacturers, addressed the group on the first day; his subject was "The Making of Greatness."

The Taft-Hartley Act was discussed by Major L. P. McLendon of Greensboro, N. C.

OFFICERS ELECTED

Joe L. Turbidy of Rome (Ga.) Hosiery Mills was elected chairman of the board, succeeding C. S. Kincaid of Magnet Mills, Clinton, Tenn.

T. F. Dooley of Johnson City (Tenn.) Mills succeeded Chas. McLellan of Alden Mills, New Orleans, as chairman of the seamless division. J. F. McCrary of McCrary Hosiery Mills, Asheboro, was elected chairman of the full-fashioned division, succeeding A. F. Garrou of Valdese (N. C.) Manufacturing Co.

Fritz Seifart of Hudson Hosiery Co., Charlotte, continues as treasurer.

Taylor R. Durham, Charlotte, was re-elected president and secretary.

Board of directors meeting at Roanoke. Other photos on page 196.

Snapshots at the annual meeting of the Southern Hosiery Manufacturers Association at Roanoke, Va. Story on page 195.

Anderson Named Vice-President of H. Brinton Co.

H. W. Anderson of Philadelphia, a leader in the knitting machine industry, was elected vice-president and director of the H. Brinton Co., at the last meeting of the board of directors of the company.

The affiliation of Mr. Anderson with the Brinton Co. is particularly interesting in view of his own broad interests over the years when taken in conjunction with the part the Brinton Co. has played in the development of the knitting machine industry.

Mr. Anderson was associated with Fidelity Machine Company for more than two decades.

Warp Knit Fabric Group Organized

Formation of a warp knit fabric manufacturers group under the sponsorship of The National Federation of Textiles, Inc., has been announced. It is understood that the group is to be constituted only of the sellers of warp knit fabrics; that its activities would, therefore, be more or less limited to that field of interest.

The tentative program is reported to be focused on smoother trade relations, to be brought about, it is hoped, by establishment of standard rules of practice as to such things as "deliveries," "defective goods allowances," "grading," "as are" goods, "run-of-mill," "short-lengths," 'cancellations, rejections and claims," "packing standards," etc. Adoption of a standard form of sales contract with an arbitration clause, is also contemplated.

Research on "wearability" and establishment of minimum quality standards are other suggestions.

According to the announcement, all warp knit fabric manufacturers are being invited to join the group.

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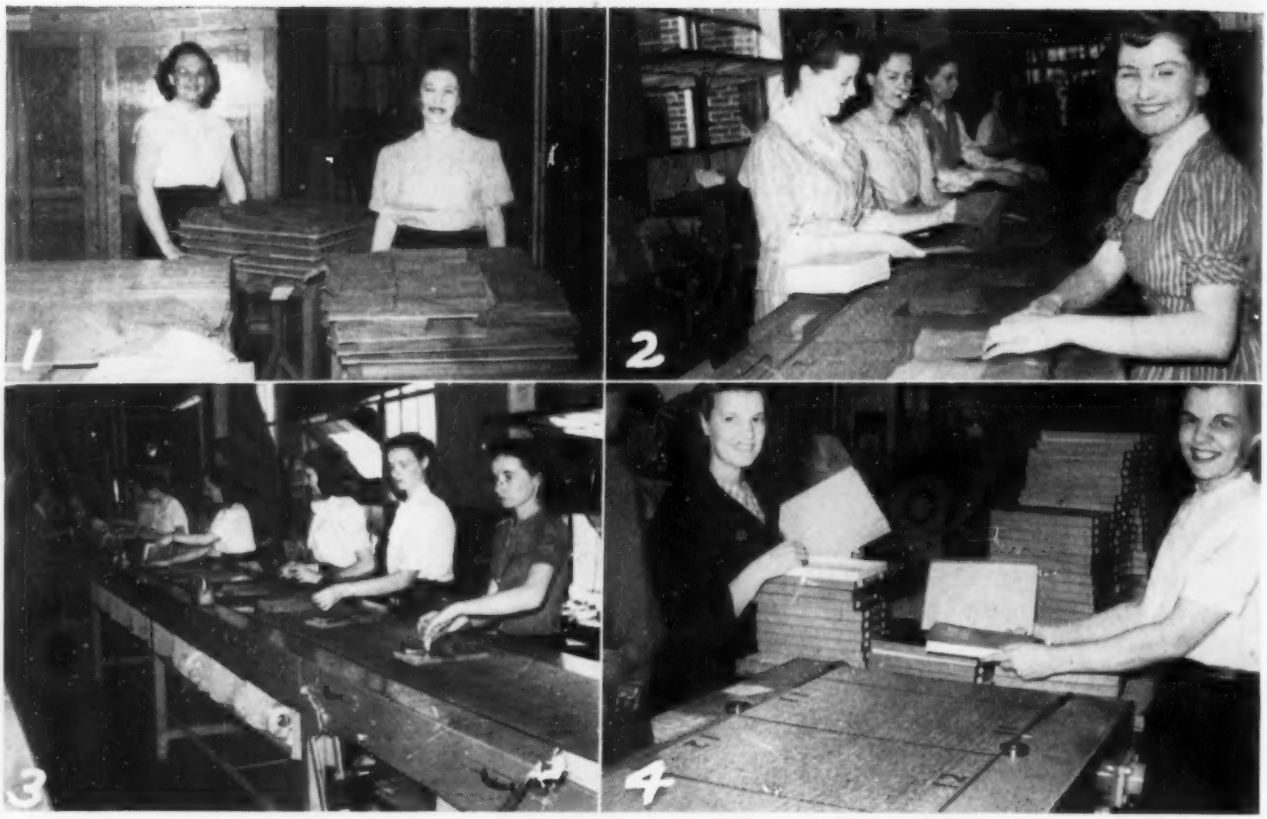

Scenes around the conveyor belt installation at the Pilot Full-Fashioned Mills, Inc., Valdese, N. C. Hosiery is stamped, inserted in cellophane packages and boxed on the conveyor belt. In Photo No. 1 above, operatives transport hosiery in lots of 100 dozens to the receiving end of the conveyor belt. Individual pairs of stockings are inserted into cellophane packages in Photos No. 2 and 3. Boxing operation is shown in No. 4.

Conveyor Belts Enter Full - Fashioned Field

Staff Prepared

SEVERAL of the leading full-fashioned hosiery mills have installed conveyor belts for the purpose of speeding up the flow of goods between inspection-pairing and packaging in order to eliminate a bottleneck between these processes.

One of these concerns is the Pilot Full-Fashioned Mills, Inc., Valdese, N. C. This company manufactures the well-known ALBA full-fashioned hosiery.

The conveyor belt used at this plant is approximately 41 feet long and has a surface speed of 46 feet per minute, enabling the operatives along the "assembly line" to insert each pair of hose into a cellophane package.

There are 14 young ladies stationed at this particular belt. Three operations are accomplished after the hosiery is deposited on the belt—namely, stamping, inserting in cellophane packages, and boxing.

Operation

The hosiery is brought in lots of 100 dozens to the receiving-end of the conveyor belt on trucks. One operator places the pairs of hose on the belt. There are four operatives at this point who begin stamping each pair with the ALBA trademark. In stamping this mark on each stocking, a cellophane package is first put under each pair.

After the stamping has been completed, the individual pairs of hose move down the line where seven operatives insert each pair into the cellophane package that is underneath it.

Two ladies are on duty at the delivery-end of this belt to insert the cellophane-enclosed pairs of hose into cardboard boxes. Three pairs are put into each box. Four hundred of these small boxes are later put into larger containers for shipment to customers.

As the hosiery moves along the "assembly line" each operator is on the alert for imperfections as to construction, damage in handling,

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packaging, etc., that might have been overlooked. As a result, several checks for defects are made on each pair before it leaves the plant on the way to retail stores throughout the country.

Employee Morale and Efficiency

There are two operations on which it is not practical to alternate operatives in order to maintain their efficiency. The feeder position, being one of the most important jobs on the belt, requires a well-trained operative. Likewise, the two girls on the boxing operation at the delivery-end are not changed about once they thoroughly learn to do the job properly. However, all the other operatives —stampers and packagers—move up one space every hour in order to prevent fatigue from standing in one spot for too long a period.

The operatives are paid on the piece work basis. They are anxious to produce as many dozens per day as possible. At the same time, each operator strives to do good work. The two boxers inspect each pair and send any bad work back up the line to be done over again.

An air of gaiety exists among the employees. Their enthusiasm is boosted by cheerful music from a loudspeaker mounted directly above and midways of the belt.

It is readily understandable that the efficiency in connection with handling goods between inspection-pairing and stamping, wrapping, and boxing has been increased ten per cent due to the installation of the conveyor belt system. The handling is decreased by twenty per cent which reduces the percentage of picks and pulls.

The special advantages of this belt are that it is easy to carry a large box stock of hose, and if a special order calling for out-of-the-ordinary packaging is received, it can be made ready within a very few minutes.

To fill a special order without the belt, it would be necessary for the operators to be scattered around several tables boxing hose. To put 100 dozens in boxes would require about three times as long as is necessary when using the conveyor belt.

The belt is electrically operated and toggle switches are installed at several points in order to quickly stop it in case something happens that is detrimental to the continuous flow of hosiery down the production line.

Rivalry Increases to Support Sales

Since spring, when many took for granted that a mild type of business recession had set in, there has been a remarkable uptrend in consumer buying of general merchandise. A very substantial part of this demand has consisted of so-called "soft goods," non-durables, including textile fabrics and knitted and woven apparel items. One of the results has been to reverse the down-trend witnessed prior to mid-year in the textile garment lines. Factory workers who had been laid off have been called back to their jobs. This is partly seasonal, in preparation for fall and winter manufacturing and supply operations. In part it also is in response to the subsidence, late last May, of the long-predicted "buyers strike."

Experienced observers of the textile apparel scene now point out that up to mid-summer at least part of the better selling outlook in the textile and related lines, for fall and next winter, is related more or less to the difficulties encountered by manufacturers of "hard lines," which were expected to be strong competitors for a larger share of consumer dollars, but now seem to have been held back seriously, by internal labor troubles and rising costs of manufacturing materials, mainly coal and steel.

It is cited that mail order concerns, variety chains and the department stores are trying to do a large-scale selling job on the general basis of best values for lowest prices. Inquiry shows that mass distribution of merchandise still depends to a considerable degree on promotions that stress price and appearance, rather than quality. In this merchandising equation, it is claimed, the advantage so far this year has gone to the "soft lines," in which quality and price are more easily manipulated, so as to cater to the masses who buy mostly from the standpoint of appearance—at a price.

The several outstanding types of retail distribution, it is explained, already have indicated the lines along which they will conduct their rivalry for sales over the next several months, and maybe well into 1948. A recent survey of retail practices in the smaller communities surrounding large centers is said to show conclusively that when and if the current uptrend in consumer buying is sustained into next year, the leading integrated outfits will be found to have added considerably to their advantages over the independent manufacturers and merchants.

In short, it is said to have been proved that industry and commerce in the United States already have been broadly "cartelized" and the producers and distributors remaining unaffiliated with potent sources of supply and financially strong distributors probably will experience very stiff competition late this year and during 1948. On the other hand, it is contended, the programs so far discussed or adopted by individual concerns, that aim to offset highly-centralized management among the competing units, appear likely to be ineffectual unless assistance comes from Congress or such a government agency as the Federal Trade Commission.

Congress has been appealed to, during the past several sessions, for legislative aid intended to safeguard "little business," but nothing of practical worth has yet resulted. The F.T.C. presently is reported as embroiled in dissension, with some members favoring a progressive course while others want the advisory role of F.T.C. to remain unchanged.

As a concrete example of what the remaining "independents" are up against, it can be stated that personal survey of merchandising conditions in the county-seat communities and small manufacturing centers in the east shows that in these places, the high-rental locations in the central shopping areas have been leased by mail order houses and the various chains. Except for a few small department stores with established following, the original (surviving) independent merchants have retreated into the back streets. Most of the leading mail order and chain establishments occupy locations which command a major part of the patronage of factory workers and other consumers. In the center areas of these communities the stores and their wares are distinctly typed. Customers are offered no variety in merchandise or service, and retail prices mostly are the same for comparable quality.

The independent merchants in these towns and villages have to rely on the ability of small store owners to exert their personality and salesmanship, simply in order to stay in business. Textile garment manufacturers, it is claimed, during the last several months have done nothing conspicuous in the direction of helping such stores to offset big business competition, but it is to be expected that unless this is done, many independent manufacturers eventually will be in difficulties themselves. Among the small stores, when collections became slow last spring, wholesalers raised their prices on fresh, better-quality goods as a method of getting rid of slow accounts. It is claimed little was done to encourage such outlets to stay in business.

Now that the commodity inflation spiral is in another upward twist, small merchants explain, they face the next few months with the conviction that worse competition will probably assail them during fall and next winter, and they are mostly without financial resources to live through a new period of consumer price resistance. The better merchandise predominantly continues to reach the larger stores, it is stated, and small retail outlets have to rely on small wholesalers, whose activities have been narrowed this year by the same conditions as affect their customers.

Silk Come-back Still Lagging

Our government has not abandoned its program for gradual restoration of U. S. consumption of silk on something approaching the prewar scope. Recently it has been indicated that a real test of the public's responsiveness will not take place until 1948. Observers say Washington authorities have been studying the situation at both ends, leading to the probability that Japan may be relieved of export restrictions before the end of this year. It is understood that raw silk stocks will be built up in this country, and soon after January 1, 1948, prices will be reduced sufficiently to encourage our mills to produce knitted and silk fabrics from silk. Meanwhile, the 1947 objectives are admitted to have failed in large part, but the experience gained by the government is said to have been valuable.

Some objections have been made to the plan for lifting export restrictions from Japan, on the ground that in relation to the rate of raw silk consumption in the U. S., the stocks already on hand here (owned by the government disposal agency) seem very large. Other observers claim that if prices are reduced enough and there is an ample stock to draw from, our consuming industries may be willing next year to plan for larger use of silk. It is admitted that a preliminary period of education will be needed. It is understood that promotional efforts are in preparation and will be directed especially to the producers of highly-styled women's apparel.

In some quarters it is assumed there is a chance that synthetic filament yarns may continue in tight supply long enough to stimulate greater interest in silk among the manufacturers. This interest may grow when and if silk prices are lowered to a really competitive level to compare favorably with the prewar average for raw silk. There is plenty of room for improvement, it is agreed, as postwar shipments to date from Japan total only around 80,000 bales.

The exploitation of silk and other Japanese products is understood to loom large in the reported plans of our government to cultivate the cooperation of the Japanese from an economic angle. Eventually the plan is to arrange a program of political freedom for Japan, with the understanding that this conquered country will be our "soldier in the far east."

Competent authorities admit there has been plenty of false starts and fumbling so far. It is considered from our government's standpoint, that all concerning Japan's economic future is important. The textile garment industry has a right to expect our government to make extraordinary efforts to get a new foothold for the widespread sale of Japanese wares in this country, and elsewhere in the world in countries relying on American financial aid.

So far, some observers say, American manufacturers and distributors are impatient with this government objective and they claim that silk has fallen into a restricted luxury category where it may remain for years to come. Some American importers already are reported to have brought in Chinese raw silk, in competition with the government's espousal of the Japanese products. A number of manufacturers say that last year they tried to put Japanese silk over, when fine fabrics were scarce and consumers were ready spenders, but their efforts then fell flat. Others explain that with the advent of nylon, before the war, the exit sign for silk was plain to be seen, and since the war's ending, nylon is better than ever, while silk quality is worse.

It remains that our government continues to adhere to the MacArthur policy for protection of American interests in the far east. As a consequence it can be expected that steps will be taken that are necessary to effectuate present plans to make Japan economically self-sustaining.

Sheer Hosiery Market is Firm

As compared with poorer times in retail distribution last month, when many stores used women's stockings as "loss leaders," a definite change in hosiery merchandising has taken place. It is presently reported that resident buyers of hosiery in the larger centers have scoured the markets for unbranded goods, primarily seeking fine-gauge sheers at reasonable prices. It is added that when the present diminished supply of such items are taken, the resident offices will have to rely mainly on monthly allotments. Consumer demand, it is said, after Labor Day will indicate how deeply they may have to become involved in the free market for higher-priced merchandise.

The market on 30-denier nylons has continued to tighten, it is asserted, and manufacturers with plenty of 51-gauge machines have encountered little difficulty in clearing 45 and 42-gauge hosiery. While some buyers report that a number of sources generally maintain an available delivery schedule, some have contracts with mail order houses and variety chain stores, and have export obligations, which serve to clamp the lid on supplies.

Interest in the use of 15 and 20-denier yarns in 45-gauge machines, it is stated, has enlarged. It has been found however, that manufacturers producing such constructions in the $10 to $12 per dozen pairs range have sold their output for some time to come. That is, early deliveries of such constructions would mean prices ranging up to $14 per dozen pairs. This would eliminate the price differential between 45-gauge, 15 and 20-denier stockings and 51-15s, which has brought many retailers around to looking favorably at the coarser-gauge type. When the yarn supply is adequate, it is indicated, a number of mills will resume making this type.

For some weeks, a good many buyers have taken for granted that for assured fall and early winter protection they must pay premium rates for sheers. More recently, some major unbranded sources and selling agents asked 50 to 75 cents premium above the mills' quotations for prompt deliveries of 45-gauge 30-denier hosiery. On this basis, some sellers reported they sold all they could command through September.

Throughout the country, leading stores are stated to have discovered at mid-year that their inventories and on-order totals were smaller than they should be, in the light of improved consumer buying. Heavy deniers still form the backbone of the major selling lines, it is asserted. Best color demand is for browns. In stores where lines have been split, the merchandise on order, or waiting for unpacking, should be enough to fill in retailers' stocks for a time.

Among retailers in some localities there has been continuing complaint that a few sources have been misbranding hosiery. Incorrect claims as to gauge have been noted, it is declared, and in some cases seconds have been offered as firsts. It is alleged this has occurred most often in nylons. Industry observers comment that when prices are high, some operators always feel the urge for substitution as they know their time for extra profits will be short.

In New York, the municipal authorities have undertaken to check this trend toward misrepresentation. Their investigations indicate that, so far, no great harm has been done. At this writing, the city officials are holding only 1,000 dozen pairs of nylons involved in misbranding charges. In trying to repress this abuse, it is reported, penalties up to $3,500 have been imposed on conviction. Where accused dealers claim they are innocent of intent to defraud customers, they get a hearing in the Court of Special Sessions.

Manufacturing groups and the hosiery workers union are on record against misbranding and it seems unlikely to become a serious menace in the future.

Textile Materials Are Well Handled

During the past ten months, some observers comment, the marketing of our textile raw materials —not only in this country but abroad—has been handled expertly from the standpoint of widest possible distribution and most profits obtainable for U. S. operators. Attention is called to the fact that, during this period, individual concerns continued to be hampered more-or-less by export regulations of our own government and restrictions abroad, together with some remaining wartime domestic controls that did not expire until earlier this year.

Cotton is cited as an outstanding example of a textile material that has continued to yield commensurate profits during a very difficult transitional period. As viewed by these observers, cotton has produced profits not only for the growers and primary handlers, but for most of those who process it into semi-manufactured items and finished merchandise. That is, not only has cotton continued to be profitably exported in the raw state, but our own economy has found employment for the larger part of it, and this is expected to continue through the balance of 1947.

Fibers that in some measure are competitive, including wool and synthetics, it is explained, likewise have been competently merchandised. The point is urged that, after all, the world is not pressed by an actual, over-all scarcity of any of these materials. Even in Europe, it is related, most citizens possess enough clothing to represent a minimum wardrobe, and the need abroad for house furnishings, decorative fabrics,

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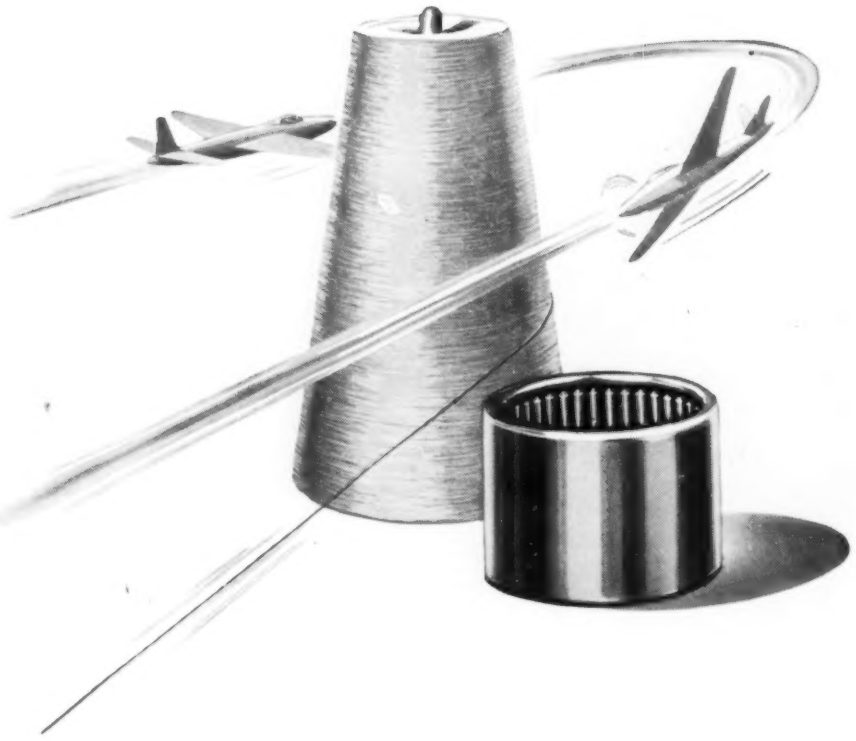

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etc., is not imperative. In short, the people in "poor" countries may look shabby, but they are decently clothed.

Toward the end of 1946, from the standpoint of the economist, postwar accumulations of textile fibers appeared likely to be disposed of at a loss. This outcome in most countries would have been at the taxpayers' expense, as postwar stocks of cotton and wool were largely government owned.

In retrospect, it is admitted, it required plenty of courage for independent raw cotton operators and others, to stand by the values they figured in advance for their holdings of cotton, wool, synthetics, etc., and to so direct their promotional activities as not to create a surplus of offerings at any one point, the world over, that would have brought about a serious break in prices. In the case of wool, our importers did a comparable job as a stabilizing influence, to prevent prices in foreign centers from rising above the level at which wool could be brought into this country and profitably processed.

Approach of the fourth quarter of 1947 is said to find the economy of the United States in sound condition, even considering that financial and commercial affairs abroad may deteriorate further. The fall season in America, it is stressed, begins with the highest level of well-paid employment in history, and with plans afoot, backed by our government, that are designed to uplift the economic position of leading foreign countries early next year.

Students of economic history predict that in the future a due award of credit will be given to the role played by our corporate and individual American business concerns, for helping to restore order in international transactions so soon after a great war, when the early postwar trends pointed toward financial chaos and vast losses.

Also in the handling of their domestic position, it is added, the few dozens of firms that ultimately direct the flow of our textile raw materials showed fine statesmanship and as a result are now in position, partly because of the large financial reserves they acquired, to soften the ultimate adjustment of values in this country, to the end that a transition toward world-wide economic prices for salient commodities and services may be completed in orderly fashion.

As Prices Rise Reserves Gain

The rebound in retail trade since May has relieved textile apparel manufacturers and their outlets. At this time there are said to be some misgivings as to whether all the necessary contingencies can be cared for, so that in case the U. S. gets a full-scale depression instead of the interim recession predicted last winter by the economists, business concerns can win through without serious losses.

Observers state that in the textile field, for example, the satis-

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factory manufacturing profits earned during the first half of 1947 have largely been wisely put back into the business in various ways. It is cited that no extra dividends have been granted, though manufacturing income as of June 30 was higher than expected. Part of the profits went into further repairs and improvements in plants and machinery, it is explained. Reserves got liberal allotments out of profits. In some quarters it is stated that the main purpose of following up closely the profit-opportunities during the balance of 1947 will be to further strengthen the average producers' financial position.

Management is said to have remained keenly alert to increased risk of inventory losses from the recent and current reloading process among wholesalers and retailers, at the higher range of prices that will prevail over the next few months. It is feared that when sales fall off and prices decline again, inventory values once more will be under extreme pressure. The distributors have recognized the danger of large over-valued inventories, and it is related that most of the larger merchandising organizations still exercise caution in some directions. Their policy is to stabilize inventories of general merchandise at a level that will afford prompt service but no undue commitments.

Credit authorities point out that the increased risk of inventory losses is closely affiliated with the corresponding expansion in accounts receivable. It is recalled that losses from bad debts can mount rapidly when receivables reach their present level. Some of the veteran credit checkers contend that risk increases faster than the amount of receivables owned, due to the fact that the receivables are being enlarged during exceptional business prosperity.

It is commented that even marginal concerns have been able so far in 1947 to show substantial earnings and present an appearance of financial soundness. With another downward turn of the business tide, many such concerns quickly could be converted into casualties, whereby they might inflict substantial losses on their creditors.

Experienced operators in this field counsel a middle course under these circumstances. It is admitted that nobody can hope to hold down bad debt losses at anything like the low current level without seriously hampering the opportunities of their sales department. On the other hand, it is declared, unless the standards for credit sales are tightened gradually, excessive losses may occur later.

In any event, it is contended, realistic accounting requires the setting aside of ample reserves for prospective contingencies, regardless of the very favorable experiences of recent years. The conditions that gave rise to exceptionally low credit losses are bound to change, and a new set of circumstances may rapidly develop that could result in much higher credit losses.

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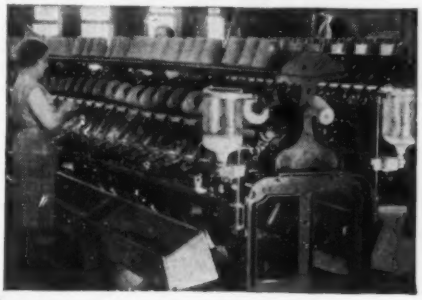

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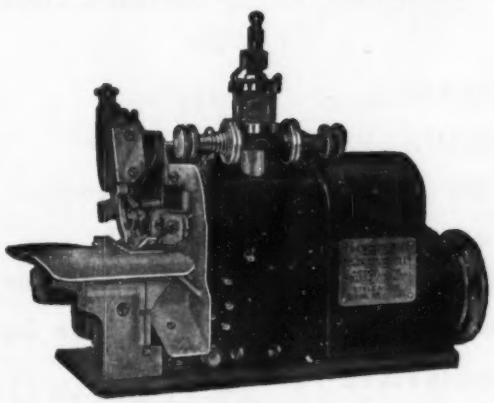

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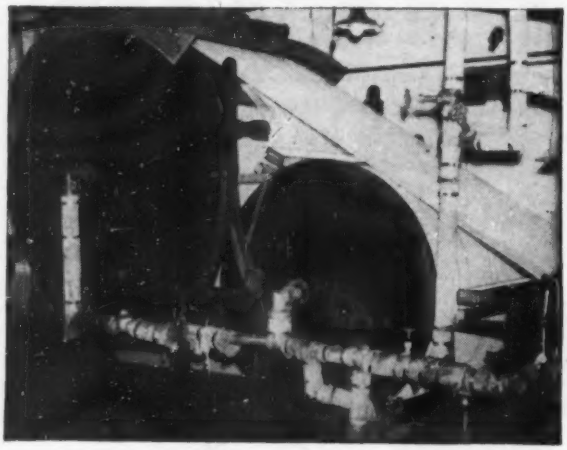

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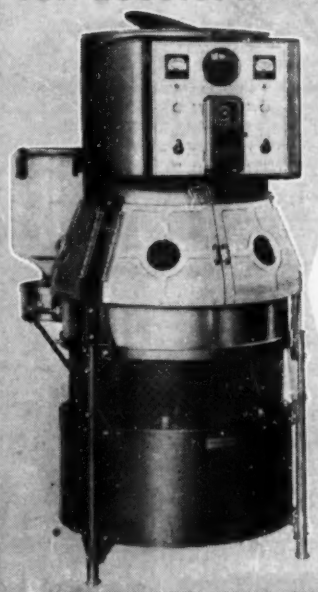

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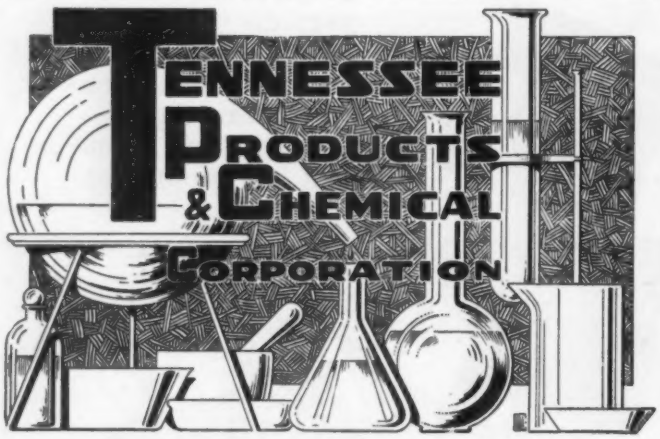

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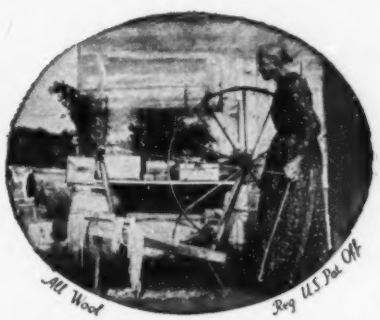

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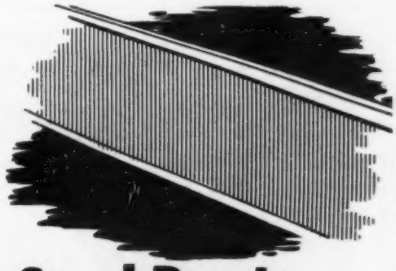

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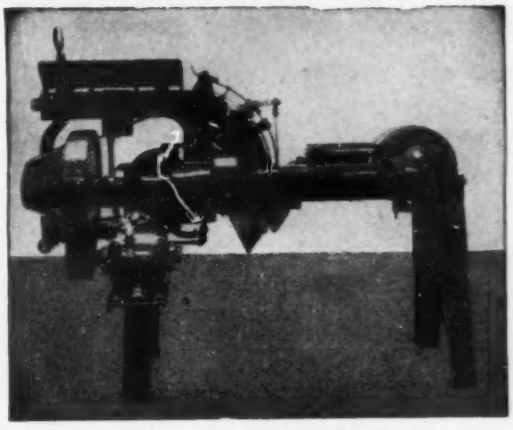

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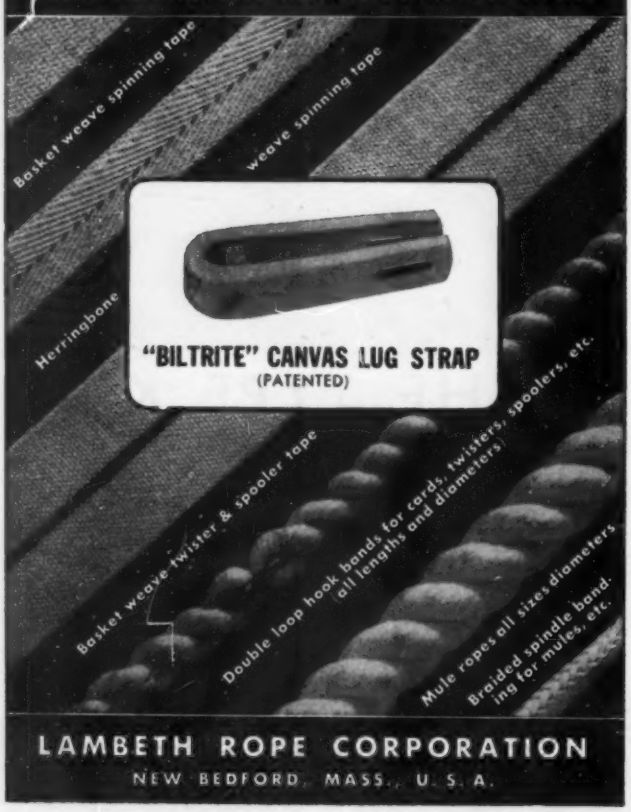
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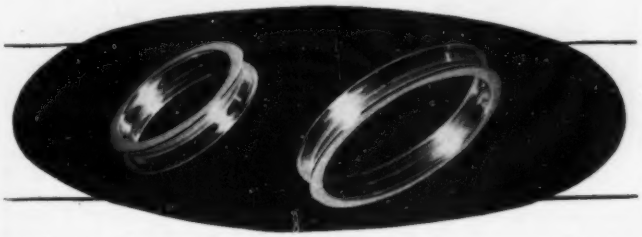

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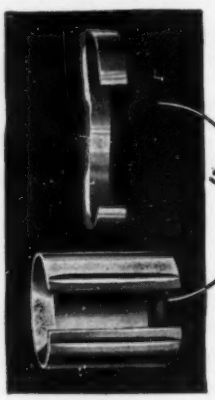

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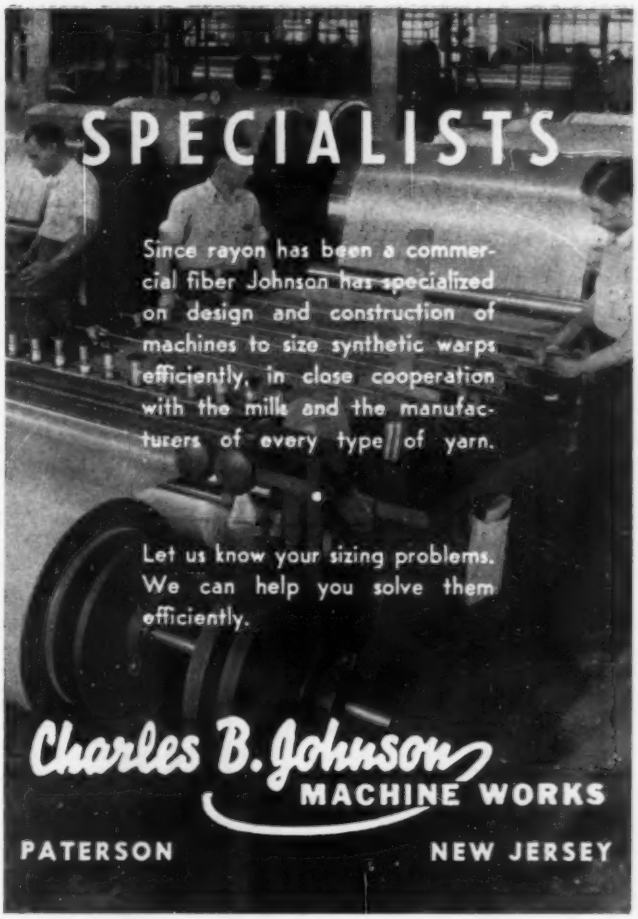
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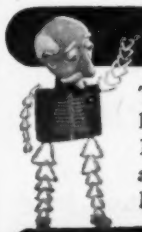

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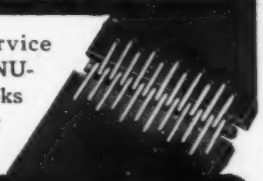

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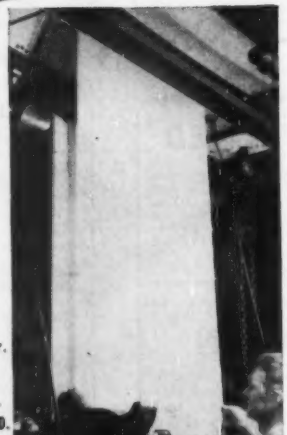

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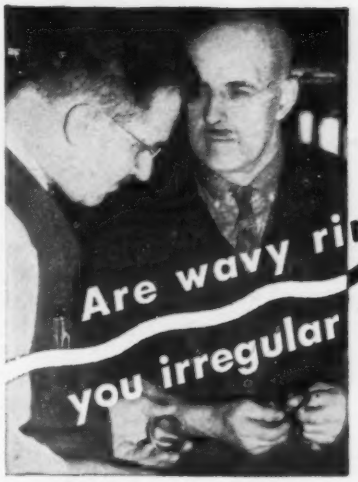

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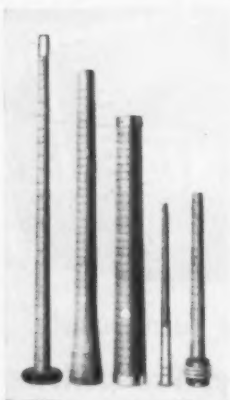

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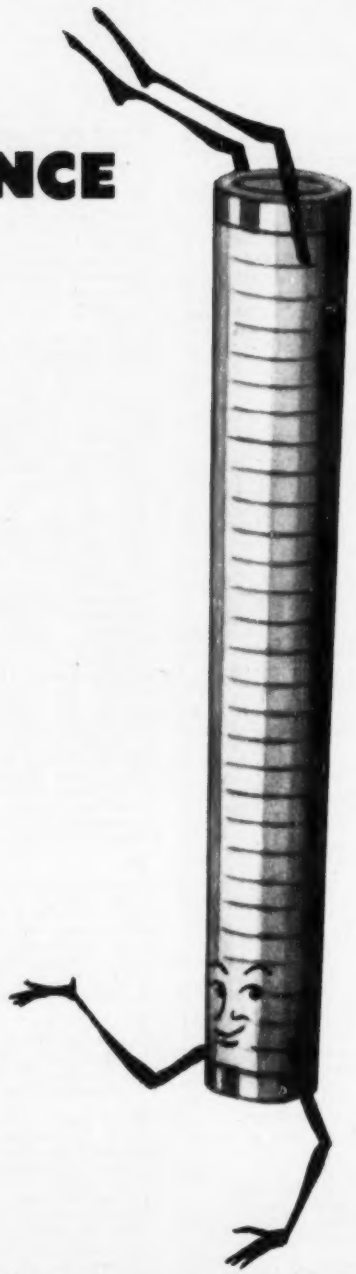

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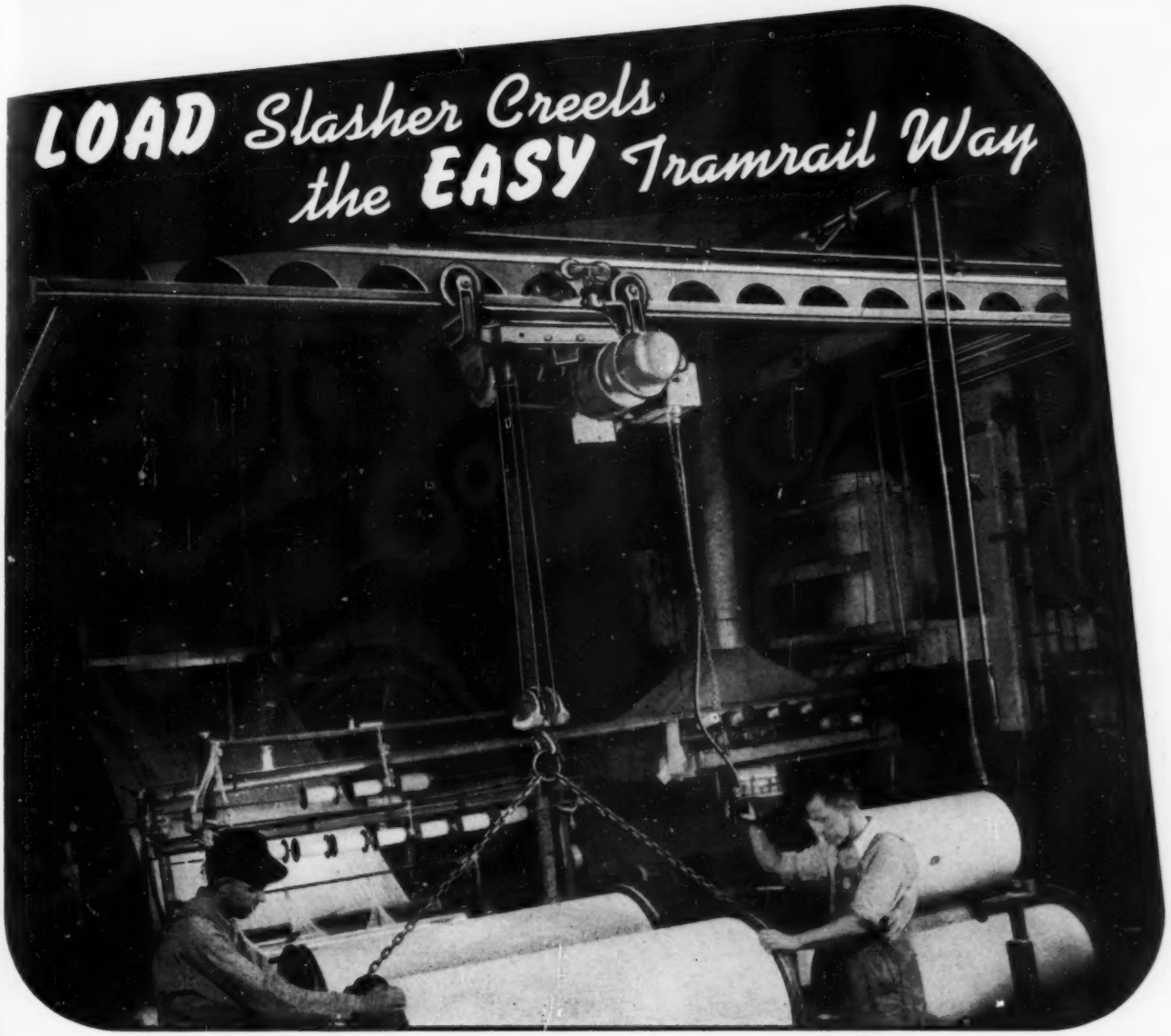

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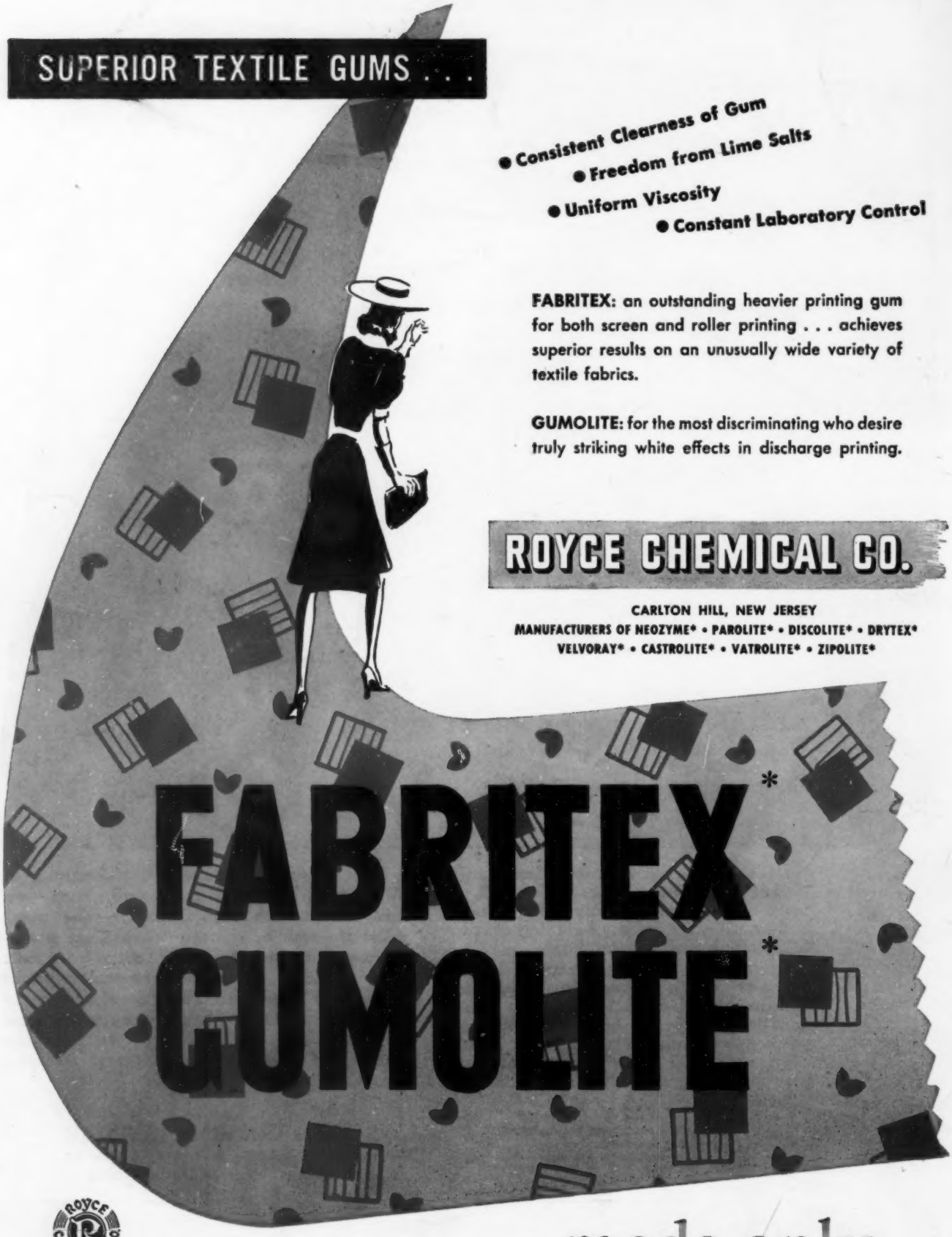

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